

The Dock and Harbour Authority

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Editorial Comments

A Great South American Port.

Located on the Southern side of the Estuary of the River Plate, across the broad waters of which the thunder of the guns engaged in the recent naval encounter of Punta del Este must have roared and reverberated loud and long, the great city and port of Argentina stands to welcome the overseas commerce of the world with a name at once euphonious and full of happy symbolism for nautical men. Buenos Aires, in its English significance of beneficial breezes, seems to have impressed its early discoverer with its favourable attributes.

As the great exporting port of the Argentine Republic, despatching annually enormous supplies of meat and grain to the British Isles, Buenos Aires has a special interest for English shipping agents and port officials. The River Plate is the provenance and destination in turn of a large proportion of the merchant fleets of various nationalities, with charters to and from British ports, and as such is the subject of periodical announcements in the shipping press giving the depth of water currently available in the river for navigation—a matter of no little importance in the case of an entrance channel liable to pronounced fluctuations in level.

As far back as November, 1920, and again as recently as July, 1933, particulars were given in this Journal about the berthage accommodation and cargo handling facilities of the port, so that it would be superfluous to touch again on matters which have already been recorded. At present, it is the future outlook which is under consideration with a view to making adequate provision for growing needs. The local authorities have not been idle in this respect. To start with, the system of administration has been the subject of close attention and a technical specialist was despatched a short time back to Europe in order to study the organisation of the principal ports. His investigations led to the conclusion that in contra-distinction to the general prevalence of local autonomy in outstanding European models, the administration of the Argentine port was hampered by the conflicting interference of five different Ministerial controls. This gave rise to the formulation of a revisionary scheme which was noticed in our columns at the time.

It is not our present purpose, however, to discuss the question of port administration, important as this is in many ways. The subject laid before our readers in the present issue by Chief Engineer Ernesto Baldassari, Director General of Navigation and Ports, is a project which he has drawn up for the extension of that side of the port's activities which relate to the coastwise trade and river passenger traffic. Our readers will find that there are substantial grounds for the development of these features, which if carried out on the lines suggested, should add materially to the efficiency and utility of the port.

Port Congestion Preventive Measures.

It is satisfactory to note, from the point of view of efficient port operation, that the Government have not delayed to implement the powers assigned to the Port Emergency Committees in regard to dealing with delays in the handling of goods and the prevention of congestion at the quayside. At the beginning of February, the Minister of Transport announced his intention of issuing, wherever and as soon as circumstances

warranted it, a local order to any particular port under the Defence (General) Regulations, empowering the Committee in the event of undue delay to remove goods from the port at the expense of the importer. The text of the order will be found on another page of this issue.

The effect of the order, which will only be issued when the Minister is convinced that serious congestion is threatened or has actually manifested itself, or when the transport services of the port in any of their forms are labouring under excessively heavy pressure, is to authorise the Port Emergency Committee to designate to an importer a means of transport (whether by road, rail, inland waterway, or coastwise shipping) which will be available for the removal of his goods within the ensuing 48 hours. Should he neglect to avail himself of the facility or facilities in question, the Committee thereupon become empowered to remove the goods and to convey them to the place of consignment, or any other place where the owner may reasonably take delivery, by any means of transport which the Committee think fit, at the risk and expense of the owner, subject to a lien on the goods for the cost. The order, unless specifically renewed, will only remain in force for one calendar month.

The step outlined above, however arbitrary it may appear on the surface, is in every way justified and is, in fact, the only expedient for dealing with a situation which was the source of much trouble and confusion during the war of 1914-1918, when the quays of British ports were blocked for weeks on end with goods awaiting removal. Even under normal peace-time conditions, there is a tendency on the part of many importers to be dilatory in taking delivery of their consignments, which are often allowed to encumber dock transit sheds after the schedule period for removal has expired; to some extent it must be admitted, owing to a reluctance on the part of the local authority, for several reasons, to enforce the official regulations. In their own, no less than in the national, interest traders will be well advised to act expeditiously and avoid the unpleasant consequences of any arbitrary exercise of power by the Port Authority.

The St. Lawrence—Great Lakes Seaway.

News of outstanding interest and importance is contained in the announcement in the Canadian press that not only have the negotiations between the Canadian and United States Governments concerning the construction of a ship waterway from the mouth of the River St. Lawrence to the Great Lakes of North America, so regrettably and unfruitfully broken off in 1938, been resumed, but that practical agreement has been reached by the governments of the two countries regarding a treaty under which the work can be put in hand forthwith. It is understood that the opposition of the Ontario Government was overcome by the negotiations of the Dominion Government and that a conference of officials at Ottawa on January 9th, after a two-days' discussion on the project, resulted in a clarification of the various engineering and financial problems involved. Subsequently, there has been a formal acceptance of the proposals put forward by the United States for the constitution of a Commission consisting of not more than ten members (equally divided between the two countries) with wide powers to carry out the project. This Commission would be entrusted with the preparation of plans for the works in the international

Editorial Comments—continued

section between the towns of Prescott and Cornwall, subject to approval by the respective Governments, who would allocate operations in accordance with the treaty, approve contracts and generally supervise construction.

The scheme put forward by the United States in 1938 provided for (1) a 27-ft. seaway from the Atlantic Ocean to the head of the Great Lakes. This would be jointly constructed at an estimated cost to the United States of \$243,661,000 and an estimated cost to Canada of \$38,071,000. (2) Ontario and New York State would have equal rights for power purposes on the international section of the St. Lawrence River amounting to an estimated 1,100,000 horse-power for each. (3) Ontario would be permitted to export power to the United States. (4) Additional diversion of waters of the Niagara River for power purposes would be permitted to New York State and Ontario, amounting in each instance to 5,000 cu. ft. a second. (5) Ontario would be permitted to proceed with the Long Lac and Ogoki diversions. The additional water thus made available would be the exclusive property of Ontario and would be available for power purposes at Sault Ste. Marie, at Niagara and on the international section of the St. Lawrence. (6) Joint works would be undertaken at Niagara in order to preserve unbroken the crest of the Falls and enhance the scenic beauty.

It is understood that as soon as legislative sanction has been obtained, both at Washington and Ottawa, the United States Corps of Engineers will commence work forthwith on the International Section, which represents an outlay estimated at 280 million dollars. This will be borne almost entirely by the United States, in view of the work already done by Canada in the construction of the Welland Canal and other navigational aids.

It is greatly to be hoped that no further impediment will intervene to prevent the accomplishment of an undertaking of world-wide importance, which will fundamentally change the scope and range of trade with ports on the North American Lakes.

The Plight of Neutral Ports.

If any evidence were required to illustrate the sad plight into which the port trade of neutral countries contiguous to the British Isles has fallen in consequence of the present war, it is immediately and convincingly forthcoming from a recent statement made by Burgomaster Dr. P. J. Oud, of Rotterdam. He pointed out that the monthly quantities of manufactured goods had shrunk from $3\frac{1}{2}$ to one million tons and that during the first four months of the war, the traffic of Rotterdam was reduced by an amount which represented the traffic of a whole year for the port of Marseilles and which exceeds the annual figures for the ports of Havre, Bremen or Amsterdam. Here are the returns for the past two years:—

	1939	1938
Ships arrived	12,026	15,360
Net tonnage of shipping	19,400,000	24,700,000
Imports and exports (tons)	33,400,000	42,400,000

It is a lamentable state of affairs and, unfortunately, there may be worse to come. But grieved and vexed as they may well be, the Burgomaster and his fellow-townsmen should ask themselves what would have been the plight of the Netherlands ports if Hitler had been allowed to continue unchecked his mad career of conquest and plunder? Was there any other way of escape for Europe than by facing the bully and bringing him to book?

Ports and the Ice Blockade.

The severe spell of wintry conditions, unexpectedly prolonged during the beginning and middle of February, has naturally had a detrimental effect on the accessibility of ports, especially those situated in high northern latitudes. Even ports which are generally considered as immune from interference with their normal conditions of working, have experienced a definite amount of restriction and inconvenience. In Baltic and Danish waters navigation has been a matter of extreme difficulty and ferry traffic in the main sea channels has either been interrupted or seriously impeded. Reports from harbours along the Scandinavian and Danish coastlines have indicated the presence of large masses of solid and floating ice and ice-breakers have had no little difficulty in maintaining open passages through the approach channels.

Inland, the conditions have been even more severe. Rivers and canals on the Continent have been frozen over, rendering water transport impracticable. The River Danube has been closed to navigation. The Soudina mouth has only been kept open by means of ice breakers, but navigation has not been practicable beyond Toulcea at the head of the arm.

Ersatz Hamburg.

The official recognition by the German Government of the Port of Stettin as the principal port of Germany in place of Hamburg, for the time being, at any rate, relegated to the back-

ground, on account of the effective blockade exercised by the Allies in the North Sea, gives rise to some interesting reflections. Located on the shores of the Baltic, it is at present free from any external attack or pressure, and is free to command an extensive trade with the neutral Scandinavian countries, which indeed is quite considerable. This trade will always be available, though it will necessarily be shared with Lubeck, Danzig, Königsberg and other ports. Yet when normal times resume their sway, the strategic position of Hamburg in regard to the transatlantic, and, indeed, all the overseas routes must enable the port on the Elbe to recover the premier position.

Meanwhile, it is reported that new docks and warehouses are being erected at Stettin on land acquired by the German Government and that intensive operations are in progress with large bodies of labour transferred from the North Sea ports and from the Baltic Republics.

Stettin lies on the River Oder, 17 miles above its point of discharge into the Stettiner Haff, a well-sheltered and almost totally enclosed inlet, and some 30 miles from the open sea. It consists of five harbours or basins; the Old Harbour with an area of 150 acres and 23-ft. depth of water; the Dunzig Harbour of 21 acres, 26-ft. deep; the Reinerwerder Harbour of 32 acres, 29-ft. in depth, the Industrial Harbour of 63 acres, 29-ft. in depth and the Free Harbour of 54 acres, also 29-ft. in depth.

By means of the Oder, Stettin possesses a considerable ramification of inland waterway connections, extending southwards through Frankfort and Breslau into Silesia to link up with the new Adolf Hitler Canal and destined in time to reach the Danube. This will provide a vast hinterland for Stettin which may well enable it to contest the supremacy in inland waterborne trade with Hamburg, although the latter possesses a great natural advantage in its connection with the Rhine and the Elbe systems.

Stettin has an interesting history dating from the 12th Century. It joined the Hanseatic League in 1360, though apparently it did not gain much advantage therefrom. For some years, it was ceded to Sweden, but eventually reverted to Prussia, which had absorbed the dukedom of Pomerania. Between 1806 and 1813 it was in the hands of the French. The real modern progress of the city and port dates from 1874, when its antiquated fortifications were demolished and space was afforded for the expansion of its industries and commerce.

Russian Inland Waterway Development.

Having exploited the rivers Volga and Don and made them the nucleus of a network of canals and inland waterways which covers the larger part of the territory of the Soviet Republics in Europe, the Soviet Government is now reported to be turning its attention in its third "Five Years' Plan" to the development of the region drained by the River Dniepr. The intention is to make this river, which discharges into the Black Sea, another great navigable link with the Baltic, at the same time utilising its important power potentialities for a series of hydro-electric generating stations and its surplus waters for the irrigation of the Steppes of the Southern Ukraine and in the Crimea. To achieve connection with the Baltic, and also with the Caspian Sea, a canal will be cut from the Desna, the principal tributary of the Dniepr, to the Oka, bringing it into association with the Moscow-Volga Canal. As the Moscow river flows into the Oka, Kiev will be joined by waterway to Moscow.

The enterprise manifested by the Soviet Government in developing the internal waterway systems of Russia is very remarkable and stands out in striking contrast to the official indifference displayed in this country in regard to inland water transport. It cannot be pretended, of course, that there is any appropriate comparison between the enormous lengths of Russian rivers and those in Great Britain, or that conditions are as favourable for development. Still the fact remains that water transport is cheap and safe and that for goods not requiring prompt or immediate delivery it has many advantages, not least at a time when the removal of goods from seaports to the interior should be facilitated to the utmost degree, as has been emphasized in an earlier comment.

The Port of Trieste and the Blockade.

It is reported from Trieste that that port is suffering severe losses in trade in consequence of the international situation. In normal times, imports account for about 55 per cent. of the cargo traffic of the port and exports for about 45 per cent. Before the war, some 60 per cent. of the imports were destined for Germany, Austria and Czechoslovakia. Now, not only have contraband consignments for the countries been cut off, but others intended for non-German countries are being despatched via the Danube. In Italian circles it is confidently hoped that the loss of trade is only temporary and that meanwhile other goods which do not come under the ban of the naval blockade may be attracted to the port.

The Port of Buenos Aires

Project of a Port for Coastal Traffic and a Riverside Station*

(Translated from the Spanish).

WHEN the existing lay-out of the Port of Buenos Aires was under consideration, the technicians of the country publicly formulated important observations in respect to its characteristics; and it was in this connection that there became manifest the difficulties which were presented not only in the convenient linking up of the sectors, but also in the internal traffic and railway service, conditions which were indisputably bound up with its exploitation.

Experience demonstrated the correctness of these views, and the great development forthwith attained by port operations—which came to surpass the highest estimates made—created a situation of such importance that it demanded a greater port lay-out; furthermore, the progress of naval architecture required features other than those available, all of which was cause for concern to the public authorities, who set about finding a solution which would serve to satisfy the important commercial trend involved.

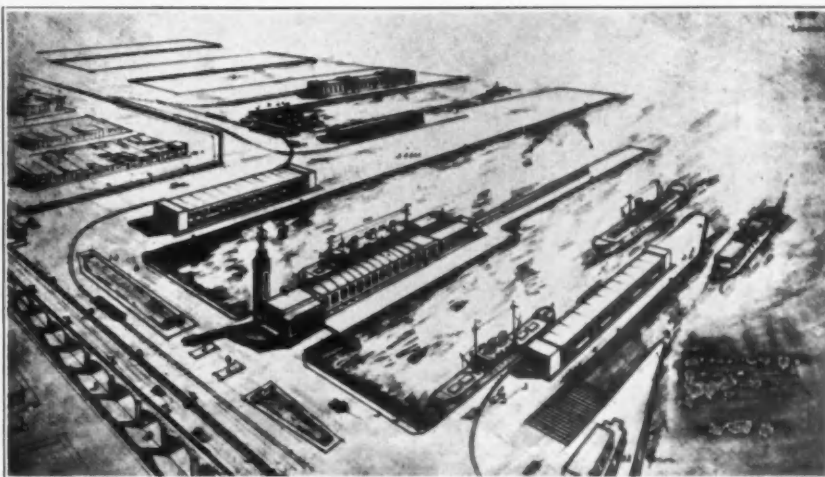
In such circumstances, the President sent to Congress a message recommending the works indispensable for satisfying these needs—a message which gave rise to Law No. 5944, authorising the extension of the port. It constitutes what to-day is known as the "New Port of the Capital," within which zone has been carried into effect the greater part of the projected works, embodying features which are appropriate to a port of the first importance, such as Buenos Aires. Its ample basins with 33-ft. depth of water provide commodious berthage, and its up-to-date equipment facilities to the utmost degree the operations of loading, discharging and warehousing goods and commodities.

General Considerations

With works of this nature, the interests of overseas navigation have been satisfied, but no such result has been obtained for the coasting trade and especially for the passenger service and cargoes of our southern coast, river frontage and inter-change with Uruguayan ports. In spite of the well-designed works in the south zone of the port of the Capital, where, although quays have been constructed, certain rectifications made and dredging done, the operations continue to be carried on as before for lack of installations and indispensable equipment.

It is a question of needs a long time set in evidence, the solution of which has not been immediately apparent or easy. To them at the same time have been added the demands arising from the constant development of shipping and port technique. These factors have increased the importance of the problem, as also the value of its solution, but since they and certain unavoidable factors affect not only the port activities but also the Customs Revenue—to the reduction of which is attributable the

*Lecture delivered by Senor ERNESTO BALDASSARI, Director General of Navigation and Ports, on April 26th, 1939, under the auspices of the Institute of Liberal Studies of the Argentine Society of Engineers.



General Perspective, First Stage.

serious delay—these must undoubtedly be taken into consideration.

Analysing in their multiple aspects the activities of the port in the South Basin, Barracas and Riachuelo, there emerges at once the necessity which exists for a determination of the means to permit a realisation of works which will concentrate the operations effected there, by facilitating access and providing commodious berthage for shipping, as also for the convenient warehousing of goods and produce in a way which will be economic and will ensure fiscal control.

General Outlines of the Project

Within this order of ideas, I have laid down the port design which is known as "Port for Coastal Traffic and Riverside Station," contriving with it to satisfy the major and minor interests of coastal traffic.

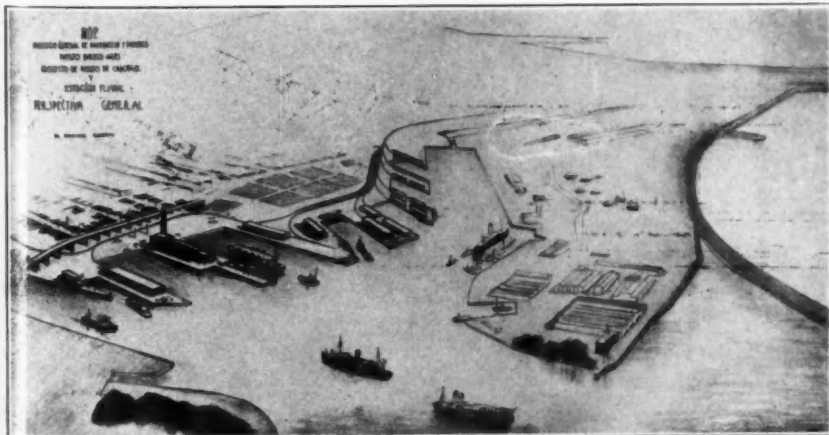
This project comprises three stages, with very definite characteristics, in respect of the needs to be met and the opportunity for carrying them through in accordance with the services which demand them.

The first, which I have designated "First Stage," deals with the most pressing needs, for it is intended to satisfy the passenger and cargo services of the river region, the South Coast, Montevideo and Uruguayan ports, by means of two basins and a riverside station; there is contemplated besides, a basin for motor boats or motor ferries, cold storage installations for the preparation and housing of perishable cargoes, railway sidings, quay-side approaches and the necessary equipment for its fullest exploitation.

Outside the port zone and annexes for the appropriate port plant plans are formed for the establishment of markets and depots for fruit and fish, which ought to be considered in time by the respective authorities as soon as the legal project has been formulated and it meets with the approval of the National Congress.

The second stage, which in my judgment partakes of the same character as the first, is designed to serve the movement of coasting vessels and particularly to concentrate that part of their operations which is performed in the Riachuelo zone; for which object there are contemplated basins, quays and the accommodation necessary for facilitating working and ensuring fiscal control.

The final stage, that is to say, the third, ought to be considered as anticipatory, since it not only permits the satisfaction of any variation arising from the decision which may be adopted as to the actual allocation of the docks, whether in the direction of maintaining or changing their purposes, but also it contemplates the future of the port and completes the second stage with a greater extent of quays, and port berthage, foreseeing the possibility of the establishment of industrial zones.



General Perspective of the First and Second Stages.

Port of Buenos Aires—continued

As shown in the respective plans, it will be constituted by the actual dock No. 1 which will permit of link connection with a series of spurs of denticular form set in the east side of the South Basin to which in the first stage already has been given the breadth necessary to satisfy the new traffic for which it is destined and by which it can change its character for that of a canal passage.

Thus have been sketched the general outlines, with an analysis of the works comprised in each stage, the needs intended to be satisfied, as also the benefits of all kinds which they represent for commerce, navigation and increased port exploitation.

Passenger Service

As regards the installations required for the passenger service, the lack of accommodation which confronts our port is notorious. Account must be taken of the overseas movement, together with a review of certain unavoidable features in the river traffic, which, after undergoing the inconveniences of separate and slow manœuvring on account of the present berthage, has to work with defective and badly placed installations, since it is served by means of "galfores" or adapted warehouses. For want of accommodation it represents trouble not only for travellers and their friends, but also for the authorities, who cannot efficiently discharge their duties nor exercise the necessary control.

The accompanying graphs prepared from statistical data which cover the period 1932-1936, demonstrate that, of the actual average of the total passenger movement at the Port of Buenos Aires, 24.43 per cent. is from overseas traffic and 75.57 per cent. traffic with Montevideo, the Paraguay littoral and the South Coast; thus of the 465,656 passengers entered and departed in the year 1936, 96,445 is overseas traffic and 369,211 appertains to the river and South Coast.

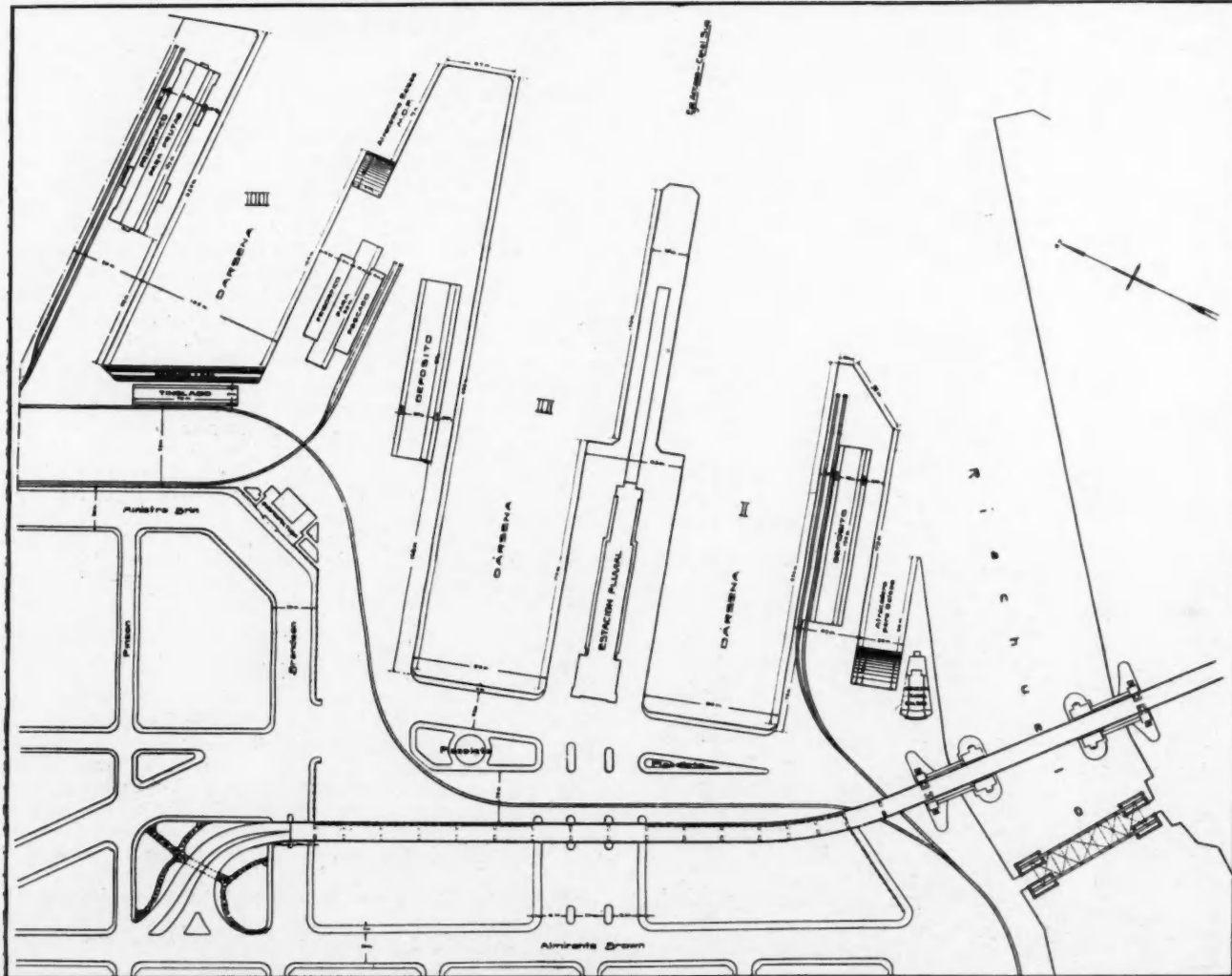
In addition, there remains the important necessity of realising how much better is the overseas passenger accommodation which to-day is afforded by all the principal ports of the world than that at Buenos Aires. Delayed by difficulties of location and



General Perspective of the Entire Project.

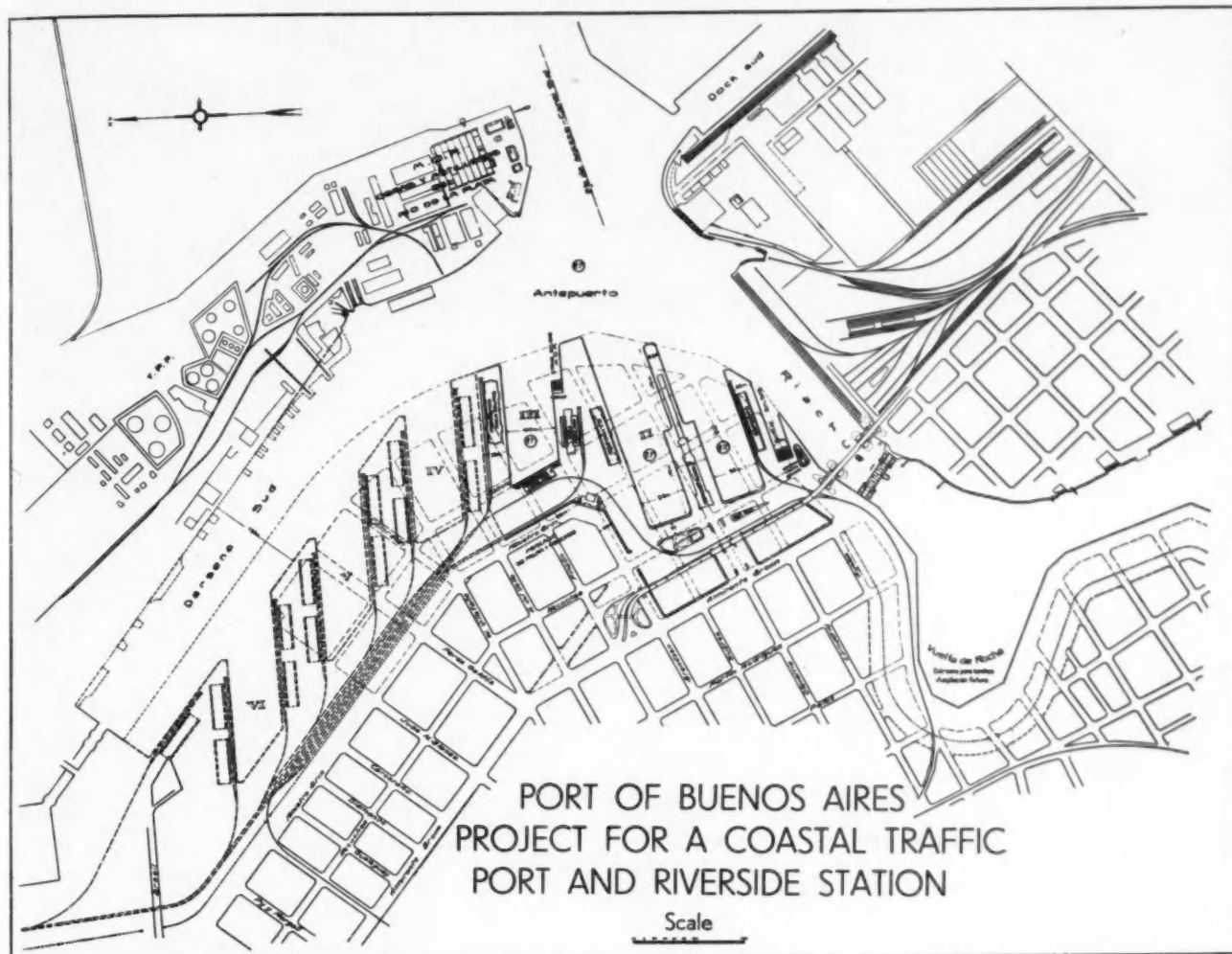
development, which I do not consider insolvable and which can be remedied almost at once, I urge, as regards the importance of the values placed in relief by the graphs mentioned, that not only do they justify, but that they make imperative the construction of a maritime station commensurate with that important traffic which, as I have indicated, represents more than 75 per cent. of the general movement of passengers recorded for the Port of Buenos Aires.

In order to satisfy the requirements and to allocate conveniently the easy berthage for vessels by reducing to a minimum the manœuvres of berthing and disembarking, there are proposed river docks which will serve a central pier, where the passenger station is situated. Both the docks and the pier have been designed in a form which corresponds to the characteristics of the traffic which will make use of them, account being taken not only of the simultaneous arrival and departure of various vessels, but also of the operations of loading and discharging merchandise and produce which has to be performed at opposite jetties, where reinforced concrete warehouses, with a superficies of 4,800 sq. metres, will permit of the storage of goods in transit which come from that traffic.

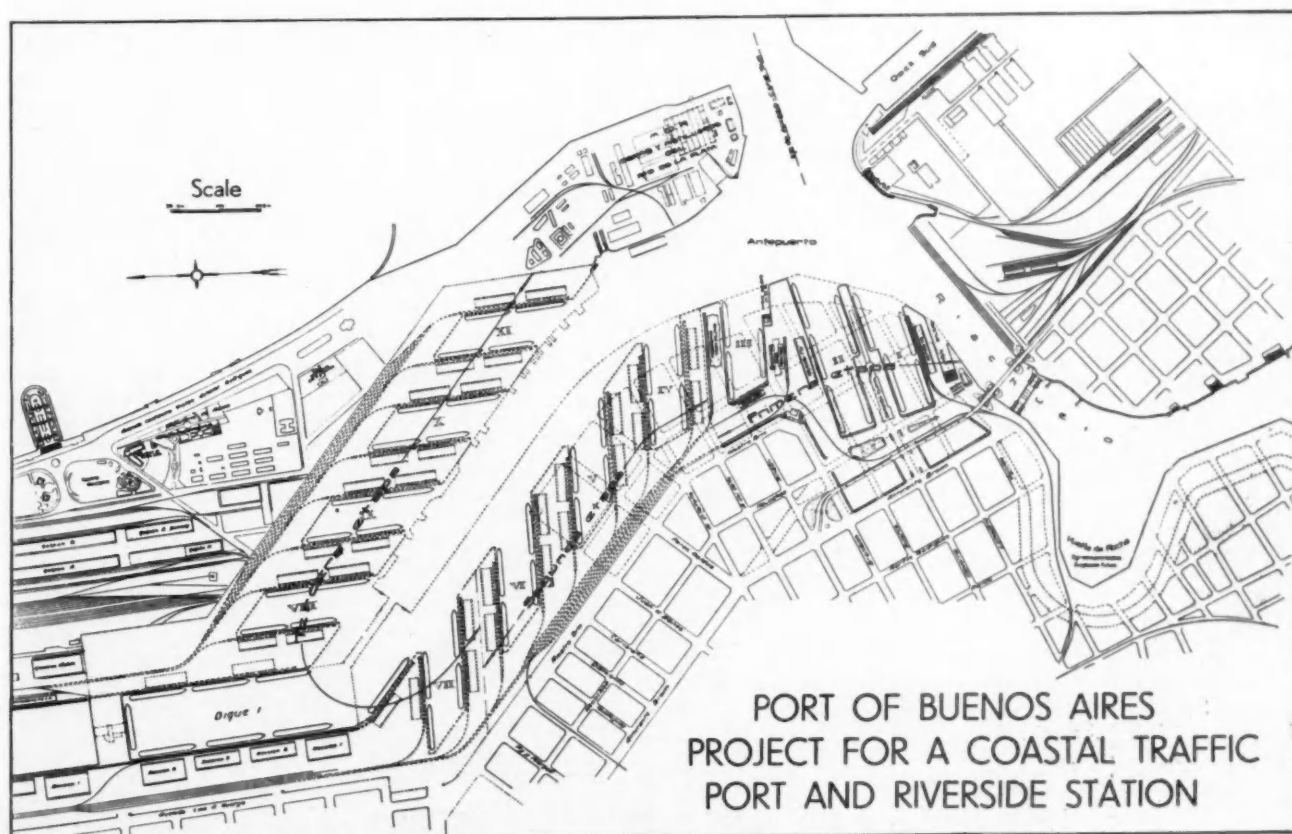


Basins for Motor Boats, Passenger Service and Cold Stores.

Port of Buenos Aires

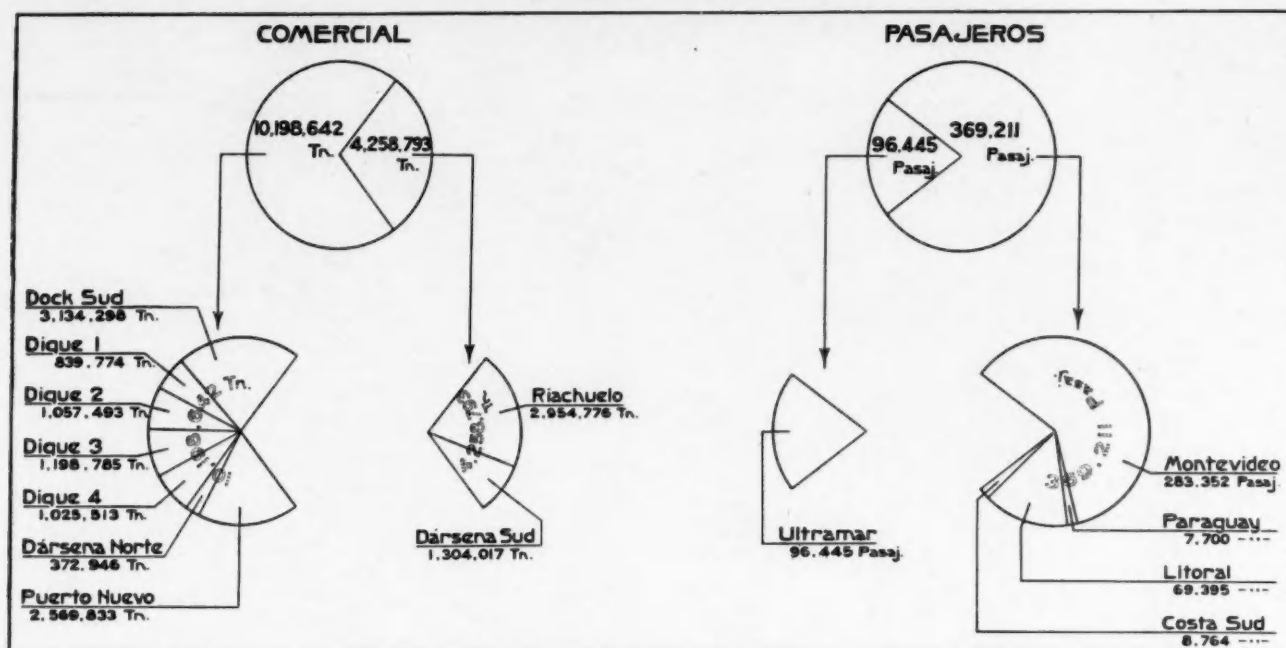


Outlines of the First and Second Stages.



General Plan comprising First, Second and Third Stages.

Port of Buenos Aires—continued



Port of Buenos Aires—Cargo and Passenger Traffic, 1936.

The situation of the central pier has been decided upon in relation to that of the southern entrance channel to the Port of the Capital which will greatly facilitate access and berthage.

The river station, with its total area of 7,300 sq. metres, corresponds in every respect and amplitude of arrangement to the standard established for installations of this nature, and permits of attention being given to the present passenger traffic with provision for the future. Within it can be placed branch depôts of the participants connected with those services.

The reception and despatch of passengers and baggage will take place in a capacious hall of 1,320 sq. metres.

Access

The whole of this port area is furnished with wide streets and shore parking places. As regards its connection with the town, there has been foreseen a prolongation of Admiral Brown Street, which affords not only direct access to the river station, but allows for the regulation and direction of vehicular traffic,

especially at certain periods of the year when tourist traffic represents a daily movement of almost 2,000 passengers with their attendant baggage.

Cold Storage Installations

Up to the present, perishable cargoes have not been contemplated in the port establishment; only in some cases has private capital anticipated public investment on a necessarily limited scale.

The trade interchange exhibits very important figures for the importation and exportation of fruit; it is incumbent then to provide in the port installations means to satisfy this business, associated with fishing, which daily acquires greater importance.

Fish Storage

The constant attention of the National Ministry of Agriculture and the energy of the merchants who deal in fish in the country, have placed this industry in a position so favourable that it compels the provision of convenient storage, not only in the interior, but in the exterior.

According to data supplied by the Director General of Cattle Breeding of the Ministry of Agriculture, there is working at the Port of Buenos Aires, a fleet of eighteen fishing vessels, almost all trawlers with a registered tonnage of between 120 and 400, a number of which will increase, because a growing tendency is observable in the industry in question. To these must be added about 100 smaller craft engaged in fishing operations in the rivers La Plata, Parana and Paraguay, bringing their catches to the warehouse of the capital.

The berthage and discharge of these vessels is done in different places within the port area, necessitating in some cases double handling with manifest depreciation, since such goods ought to be handled in a minimum of time.

The plan under review assigns part of a dock pier exclusively to these operations, contemplating the installation within it of a cold storage warehouse for fish, with chilling and freezing plant; it will permit the storage of 300 tons and an annual movement of 140,000 boxes of the standard type of 50 kilogrammes each.

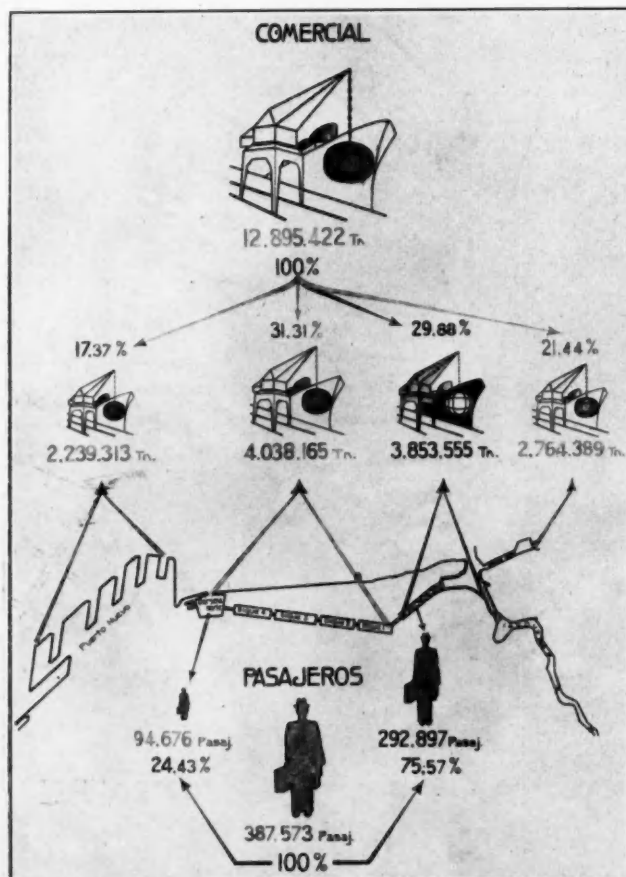
A reinforced concrete structure is planned with a total superficies of 3,960 sq. metres.

It is to be noted that in the last two years the fishery catch has been increased by more than 35 per cent. and that of the additional 35,000 tons in 1938, 16,000 tons were brought into the port of the capital.

The President has manifested a special interest in the exportation of fish, sending a message and bill to Congress, which will relieve exports of all taxation; this will be possible under convenient conditions in the scheme of refrigeration proposed, in which the fish can be treated without the necessity of withdrawing it from the port zone, and the period of refrigeration, as is the case of European and American cold stores, can be prolonged for a period of six months. This installation will materialise when the Fishery Department of the Ministry of Agriculture indicates its necessity.

Fruit Storage

In the year 1938, statistics assigned to the fruit trade an importation of 196,077 tons and an exportation of 33,074 tons, that is to say an increase of 330 per cent. compared with the year



Port of Buenos Aires Cargo and Passenger Traffic, 1932-1936.

Port of Buenos Aires—continued

1934, in which there was a net export of 10,050 tons. By way of information, I may indicate another commercial movement which successively acquires greater importance and needs its produce to be preserved by cold; I refer to garden produce, of which the export was raised from 3,366 tons in the year 1935 to 30,020 tons in 1938.

In considering products requiring cold storage the proposed coastwise port should have a special building for fruit refrigeration, with chambers capable of storing 30,000 crates or standard size boxes, as well as a replenishment of 10,000 boxes every 24 hours.

Concentration Warehouses

The circumstance that the projected port scheme offers unique facilities of access for products reaching the capital, whether by river or overland, permits of the satisfaction of the statutory projects, as much for fruit as for fish and maritime harvests. With this object, outside the port zone, consideration is given to the establishment of two concentration warehouses. The aforesaid laws enable the President to agree with the municipality of the capital as regards construction and method of functioning. They represent a complement to the docks and cold stores and their conjunction will allow of regulation in a convenient form of this source of the national wealth. These arrangements will benefit also the producers of the Delta who have always demanded installations for the storing and preservation of fruit.

South Basin Connecting Canal

The projected scheme assigns to the South Basin an important rôle since it transforms it into a canal passage and connection for the basins and Dock No. 1. Its present width of 117 metres is increased to 190 metres.

The boundary on the side of the city is obligatory, since it has to be fixed by the road bridge actually under construction and relative thereto the lengths of the docks and piers have been laid down; if, later, a greater width should be found desirable, it will be possible to make a satisfactory alteration in the line of quays of the eastern side, which is easily contrived in the projected plan. In this respect, I ought to point out that the piers have been arranged in such a way that on the total completion of the work they will facilitate in ample measure the entrance and departure of vessels from the basins.

Dredging

The depth of the basins has been determined so as to satisfy completely the draughts of vessels which visit this section of the Port of the Capital.

The South Canal, in accordance with values resulting from graphs which have been prepared from statistical data corresponding to the periods 1925 to 1927 and from 1934 to 1936, is practically utilisable by 90 per cent. of the vessels with draughts between 12 and 24-ft. and there is only 10 per cent. with greater draught that make use of this way of approach; these percentages, which vary appreciably for draughts of 25-ft., are such as to enable the normal maximum draught of vessels navigating the canal to be fixed at that figure.

The deepening of the South Canal to 30-ft. has been contemplated, but for economical reasons and in accordance with its effective utilisation, the President by a decree of the year 1932 approved of its deepening to 27-ft. below zero datum of the Riachuelo, with a breadth of 120 metres at the bottom. Actually, by means of dredging, a depth of 25-ft. is maintained from which, taking into consideration the favourable margin due to the tides of the river Plate, it can be inferred that there will not be the least difficulty in meeting the needs of river steamers which will visit the proposed port.

For the basins a depth of 27-ft. below zero is fixed affording thereby an ample margin at the berthing sites. The actual depths of the South Basin and the Dock No. 1 are 21 and 24-ft. respectively.

The quays are to be constructed in reinforced concrete, similar in design to those reconstructed in the Riachuelo and they will permit of a maximum dredging at the foot of 9.14m, that is 30-ft.

The basins have been given a width equal to six times the beam of the typical barge, that is, the maximum estimate in this respect has been adopted.

As regards the piers, they have been given dimensions and arranged in a form which provides ample and convenient working areas, for warehousing and despatch.

Second Stage

The second stage is constituted by the Basins IV., V and VI., and the piers corresponding thereto have a total quayage length of 2,600 metres, equipped with installations and the necessary accommodation.

Both the type of quay and that of the sheds are analogous to the type adopted for the berthage works of the first basin. The accompanying plans exhibit their details.

This stage plays an important rôle in the scheme, since its completion marks the concentration in it of that part of the river traffic which uses the South Basin, Barracas and Riachuelo, with operations which have to be carried on within the Customs area.

(To be continued)

Prevention of Congestion at British Ports

Text of Proposed Order by the Minister of Transport

The following is the text of a proposed Order by the Minister of Transport in relation to port traffic congestion:—

Whereas by the Control of Traffic at Ports Order, 1939 (a) (hereinafter called "the general order") the Minister of Transport (hereinafter called "the Minister") has made provision for regulating, facilitating and expediting the traffic at the ports in the United Kingdom.

And whereas it appears to the Minister to be necessary in the interests of the defence of the realm, and for maintaining supplies and services essential to the life of the community to make additional provision in respect of the port of.....

Now by virtue of the Defence (General) Regulations, 1939 (b), the Minister hereby orders as follows:—

1. In this Order the expression "the Committee" shall mean the Port Emergency Committee in the district of..... appointed by the Minister under the general order; and "the port" shall mean the Port of..... and shall include any dock, harbour, pier, quay, wharf or similar place (whether privately owned or otherwise) within the district of the Committee.

2. This Order shall be in force for one month from the date hereof, subject to any extensions for not more than one month at a time which may be made by Order of the Minister.

3. While this Order is in force the Committee may at any time give notice to the owner or consignee of any goods which have been unshipped or are expected to be unshipped at the port, designating a means of transport (whether by road, rail, canal or coastwise shipping) which will be available, during the period of 48 hours after the service of such notice, for the removal of such goods from the port, and in the event of the goods not being removed within that period the Committee may

cause the goods or any part thereof to be conveyed to the place to which the goods are addressed (or to any other place at which in the opinion of the Committee having regard to all the circumstances it is reasonable to require the owner or consignee to take delivery) by any means of transport which the Committee think fit, at the risk and expense of the owner or consignee and subject to a lien for such expense.

4. The notice referred to in the foregoing paragraph may be served by posting a prepaid letter to the owner or consignee at the place where he carries on business or his last known place of abode in the United Kingdom or, if his place of business or abode shall not be known to the Committee, by exhibiting the notice in a conspicuous place at the principal office of the port.

5. Before goods are conveyed under this Order the Committee shall be satisfied—

(a) That it is reasonable that the goods shall be so conveyed having regard to the state of traffic in the port, the facilities of transport available, the nature and ultimate destination of the goods and to all the other circumstances known to the Committee.

(b) That the rates to be charged for the conveyance are reasonable having regard to the means of transport selected.

6. This Order may be cited as "The Control of Traffic at.....Port Order, 194.".

(a) S.R. & O. 1939, No. 1179. (b) S.R. & O. 1939, No. 927.

Londonderry Harbour Commission.

At the annual meeting of the Londonderry Port and Harbour Commission held on January 15th, Mr. R. H. Smyth, V.L., was appointed chairman for the fourteenth successive year. The revenue of the Commission for the year was stated to amount of £31,806, compared with £32,054 for the previous twelve months, a decrease of £248. The expenditure had increased by £7,598, due entirely to the extensive dredging programme.

Luminous Demarcation for Navigable Channels of Venetian Lagoon—continued

tude of the luminous cone which surrounds the group of piles, leaving occulted to navigators the view of the source of light. It has been ascertained that in foggy weather, the reflected light from each group, painted white with a horizontal black band, does not interfere with the view and that the distance of about 50 metres between one group and the next, allows in any case effective direction of the route, without discontinuity and without risk of deviation.



Fig. 4. (above) View of Grouped Pile Pedestal with single projector.

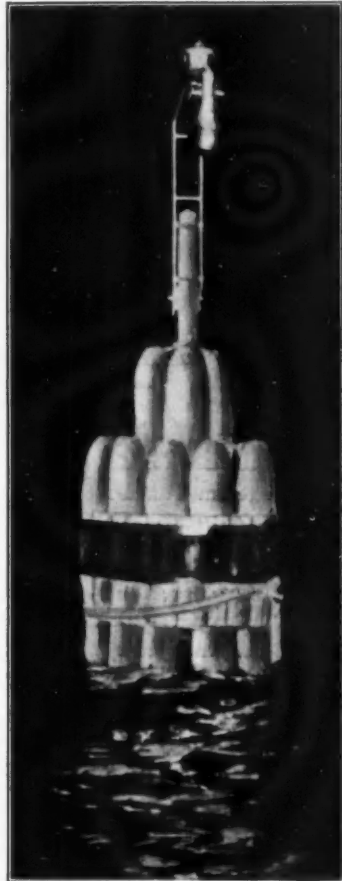


Fig. 5 (right). Larger Grouped Pile Pedestal with coloured lights, at intersections of route.

On the plan (Fig. 2) is shown the entire installation of signals which, starting from the Island of St. George (San Giorgio) passes along the Orfanello and St. Lazzaro Channels as far as the Quattro Fontane, connecting the Basin of St. Mark with the most important centre of the Lido.

The extent of the signalling system is about 3.5 kilometres. At the points indicated on the plan are located on one side of the channel 61 single projectors on as many groups of piles, already existing or reformed (Figs. 3 and 4).

For the demarcation of the junction of the channel of St. Mark's Basin with that of the Littoral channel of Quattro Fontane and of the crossing of the Orfanello Channel, green and red lamps have been superimposed (Fig. 5).

For the construction of the line of electric supply 5.5 kilometres of subaqueous bipolar electric cable have been employed of 2 x 10 mm. section, with conductors of red electrolytic copper, insulated with multiple layers of lead, bituminous paper, bituminous jute, and with double covering of strips of iron and galvanised iron, the whole dipped in a bituminous mixture in accordance with the practice of the A.E.I.

Corresponding with the borders of the channels, the cable is sunk in the bottom of the lagoon to a depth of .50 metre; for the crossing of channels of great depth the cable is instead simply laid on the bottom and anchored by means of iron rings from old chains, attached to the cable itself.

At each signal group and relative antenna, the cable ascends to a suitable iron box and descends between metallic armatures, formed of galvanised iron tubes of 60 mm. diameter. From these iron boxes, complete with various accessories, are led the conductors which pass into the projectors.

The projectors manufactured by the Ferraboschi firm, have been equipped with special reflecting mirrors of the Zeiss-Ikon type, which are composed of a cast iron head with a cone of strips of aluminium; the mirrors are affixed to the cone by means of springs and felt and arranged for the regulation and putting in focus of the electric lamp.

The electric lamps are of the ordinary type with metallic filament of 2,000-2,500 candle power, functioning under a constant current of 6.6 A.

The inclusive cost of the installation, including the transformer house and relative equipment amounted to 350,000 lire equivalent to 100,000 lire per kilometre of channel illuminated.

The apparatus is in working operation for a period normally of 10½ hours each night, aggregating 3,832 hours per annum. The cost of current being 2.5 lire per hour, the annual lighting expenditure is about 9,380 lire. To this must be added supervision, replacement of lamps, repairs, etc., which amount to about 15,000 lire per annum. Hence the total expenditure is of the order of 25,000 lire per annum.

The practical results obtained from this new system of luminous signals, which are much appreciated in competent quarters, and by the whole community, allow of the hope that it will be possible to effect useful applications to other important lagunar communications.

Madras Port Trust

Excerpts from Administration Report, 1938-39

General.—There was an improvement in the volume of trade passing through the port during the year under review.

Value of Trade.—The value of the total trade of the Port of Madras on private account, as furnished by the Collector of Customs, representing 38% of the aggregate trade of the Presidency as against 39% in the previous year, amounted to Rs. 2,962.75 lakhs or a decrease of Rs. 440.73 lakhs as compared with the previous year. Imports accounted for Rs. 1,631.62 lakhs and exports Rs. 1,331.13 lakhs as against Rs. 1,795.88 lakhs and Rs. 1,607.60 lakhs respectively in the previous year. Foreign traffic (imports and exports combined) decreased from Rs. 3,063.38 lakhs to Rs. 2,641.14 lakhs and coasting cargo decreased from Rs. 340.10 lakhs to Rs. 321.61 lakhs.

Receipts.—Excluding the sums of Rs. 70,000 contributed from the Madras Port Fund and of Rs. 45,000 transferred from the Revenue Reserve Fund and excluding the sum of Rs. 30,000 received during 1937-38 from Government towards compensation for the revetment north of the harbour and transferred during the year to the Board's Accident Fund Account, the net revenue receipts for the year amounted to Rs. 35,71,643 as against Rs. 33,83,565 of the previous year. There was thus an increase in receipts of Rs. 1,88,078 over those of the previous year.

Expenditure.—Excluding contributions to Capital Account and reserve funds the net expenditure for the year amounted to Rs. 28,67,821 as against Rs. 27,24,474 of the previous year.

Working Expenses.—Excluding from the gross expenditure contributions to reserve funds which amounted to Rs. 8,80,800, contribution to the Capital Account Rs. 26,100, interest on loans Rs. 7,64,746, repayment of debt Rs. 1,84,712, and sinking fund Rs. 78,272, the actual working expenses came to 51.52% of the income as against 50.02% in the previous year.

Sinking Fund.—A sum of Rs. 78,272 was contributed during the year towards the Sinking Fund for the repayment of the sterling loan of £330,000 raised in the London market in 1923.

Imports and Exports.—The total tonnage of imports and exports which passed through the harbour during the year under review was 1,149,045 or an increase of 2.8% on the previous year, the tonnage for the previous six years being 1,117,733 tons in 1937-38; 1,012,857 tons in 1936-37; 1,019,560 tons in 1935-36; 1,158,876 tons in 1934-35; 1,009,192 tons in 1933-34 and 1,010,890 tons in 1932-33.

New Warehouse.—A new warehouse, consisting of one big compartment of 24,000 square feet and four small compartments of 4,800 square feet each, was constructed during the year and was brought into use on the 1st December, 1938. The compartments have been rented to firms for the storage of export cargo.

Shipping.—The number of vessels that entered the port during 1938-39 was 730 against 720 in the previous year and the total tonnage increased from 2,612,681 to 2,681,606. The average tonnage of each steamer or motor vessel increased from 3,767.49 to 2,783.65 registered tons. The total number of vessels that entered the port during the past five years was 784*, 697*, 708*, 720* and 730* and the number of vessels berthed at the quays during the same period was 819*, 741*, 717*, 745* and 736* respectively.

The report is signed by Mr. G. G. Armstrong, O.B.E., Chairman.

*These figures are due to the fact that certain ships now occupy more than one berth successively during a single stay in the port.

Notes of the Month

Galway Harbour Development.

The scheme, estimated to cost £250,000, now in hand for the extension and improvement of Galway Harbour, is expected to be completed by the end of the coming summer.

Re-Opening of Dry Dock.

A dry dock at Newport (Mon.), owned by the Mountstuart Dry Docks, Ltd., has been re-opened after having been closed for the past 11 years. The dock is capable of accommodating vessels up to 14,000 or 15,000 tons deadweight.

New Equipment at Port of Naples.

The Naples Port Authority has decided to provide four cranes on the recently completed Costanzo Ciano Pier at a cost of about 3 million lire. It is also proposed to erect a branch Customs House on the same pier.

New Bulk Cargo Handling Appliance at Houston.

The Port Commission at Houston, Texas, U.S.A., has recently installed and put in commission a bulk cargo handling plant for dealing with bulk cargoes direct from rail to ship. It is particularly adapted to the handling of coal, sulphur, potash and other similar commodities and is capable of moving them from wagon to ship at the rate of 200 tons per hour.

Demand for Dockyard at Cork Harbour.

An agitation is on foot in Eire to secure the establishment of a national dockyard in Cork Harbour as a "national necessity." The movement is headed by the Cork Industrial Development Association who have approached the Government of Eire on the matter.

Tribute to Port Staff.

At a meeting of the Mersey Docks and Harbour Board on February 9th, the chairman, Sir Richard D. Holt made an appreciative reference to the work done by the outside staff in the Engineering, Traffic and Harbour Master's Departments during the severe wintry weather which had prevailed. He tendered the thanks of the Board for the ungrudging spirit of devotion to duty which had been manifested.

Norwegian Port Traffic.

During 1939 it is reported that 38,130 vessels called at the Port of Bergen, as against 36,765 in 1938, an increase in total tonnage from 5.6 to 5.9 million net register tons. The foreign trade tonnage increased by about 600,000 net tons while the home trade declined by some 300,000 tons. At Trondheim, 12,418 vessels of 3,847,164 gross tons paid calls in comparison with 11,880 vessels of 3,754,378 gross tons in 1938.

Port of London Authority and National Saving.

The Port of London Authority have inaugurated a National Savings Certificate purchase scheme to assist and encourage members of their salaried and wages staff to participate in the National Savings movement. The Port Authority will finance the scheme by purchasing sufficient certificates to cover the number which members of the staff apply to pay for by instalments over a given period. The scheme, which of course is entirely voluntary, will thus give all those who participate the advantage of receiving antedated certificates.

Texas Harbour and Channel Improvements.

An impressive programme of works recommended to the United States Congress by Major-General Julian L. Schley, Chief of the Corps of Army Engineers, for sanction during the current financial year includes the completion at a cost of \$450,000 of the present improvement project for the Port of Houston Ship Channel, and also a number of other schemes relating to rivers and harbours in the State of Texas, the aggregate cost of which is estimated at \$36,948,600, comprising \$28,866,000 for work on flood control projects; \$4,994,500 for fresh constructional undertakings on rivers and harbours and \$3,088,500 on maintenance operations. The new river and harbour work planned for Texas during the coming year includes improvements to the Sabine Neches waterway and to the Galveston—Corpus Christi section of the Louisiana-Texas Intra-coastal waterway. The former comprises dredging the Sabine Pass Channel, and the Port Arthur Canal and Channel connecting the Western turning basin at Port Arthur with Taylor's Bayou. The work on the intra-coastal waterway in Texas will consist of the construction of two guard locks at Brazos River Crossing, dredging the tributary channel in the San Bernard River, the tributary channel in Colorado River and the tributary channel to Rockport as well as a number of detail work at Galveston, Port Bolivar Freeport, Corpus Christi and elsewhere.

Completion of New Quay at Port of Assab.

The reinforced concrete quay which, as announced in previous issues, has been in course of construction at the Port of Assab in Italian Eritrea is now reported to be completed and in commission. The additional berthage has doubled the importation capacity of the port to 800 tons per day.

Use of Norwegian Ports by Sweden.

An agreement is reported to have been come to between the Norwegian and Swedish State Railways whereby Swedish exports may be diverted from ports on the Baltic littoral to those on the Norwegian coastline.

Deepening of Penzance Harbour.

The Town Council of Penzance have approved plans and specifications prepared by the Borough Engineer for the deepening of the entrance to the harbour and wet dock, and tenders have been invited for the work.

Port of New York Authority.

Mr. F. C. Ferguson was re-elected chairman and Mr. H. S. Cullman vice-chairman of the Port of New York Authority at the recent annual meeting. Mr. Ferguson is the senior member of the Board in service having been appointed a Commissioner in 1924. He was first elected chairman in 1934.

Pilotage Returns for the Port of Cardiff.

At the recent annual meeting of the Cardiff Pilotage Authority it was reported that during 1939, vessels with a tonnage of 7,131,049 were piloted into the port as compared with 6,563,437 tons in the previous year. The total number of ships piloted was 4,052.

Shipping Returns at the Port of New York.

A striking increase over the returns for the previous year is shown in number and tonnage of vessels entering the Port of New York in the foreign trade. The number of arrivals in 1939 was 6,011 and the net tonnage 28,808,651 compared with 5,672 ships of 27,374,070 tons in 1938.

New Port Authority for Naples.

Following the precedent set at the Port of Genoa some years back, the Italian Cabinet has issued a decree creating an Ente Portuale di Napoli which is to take over the administration of the Port of Naples on the same lines as the Consorzio Autonomo del Porto di Genova in the case of Genoa.

Closure of Swedish Navigable Channel.

In consequence of the sinking by a mine of the Swedish vessel "Toro," the Swedish "neutrality Channel" for Baltic-North Sea Shipping off Falsterbo at the extreme South point of the country has been closed for traffic for an indefinite period. The depth of the channel is given as 16-ft. in the shallowest part so that its navigable importance is not very great.

Delays at the Port of Gothenburg.

Publicity has been given to difficulties which are alleged to have prevailed at the Port of Gothenburg, more particularly in connection with the discharge of coal cargoes. It is explained that this has been due to a shortage in the supply of wagons for rail-borne deliveries. Every effort is being made by the harbour authority as well as by the railways to cope with the situation.

Shortage in Danish Coal Supplies

Owing to the prevalence of ice on the rivers in Germany, Denmark has been experiencing a serious shortage of coal and coke, and Danish rolling stock has been standing idle for lack of supplies. All ferryboat traffic between the islands of Sjaelland, on which Copenhagen is situated, and Funen has been suspended. For the first time within memory, ice-breaking steamers and large ferry boats have been unable to cross the Store Belt.

Port of Oslo Improvements.

Recent advices show that considerable progress has been made with the various harbour improvements in hand at the Port of Oslo. At Sjørsøya, an island on the outskirts of the harbour, which is being connected with the mainland, the new quay, 162 metres in length, in the petroleum basin has been completed. With the previously existing structure, the total length of quayage is 287 metres with a depth of 5 metres of water alongside. Another length of quay (86.5 metres) on the northern side of the island has also been completed affording a depth alongside of 8 metres. On the Southern side of Sjørsøya work has been commenced on a quay 70 metres in length with a depth of water of 8.4 metres.

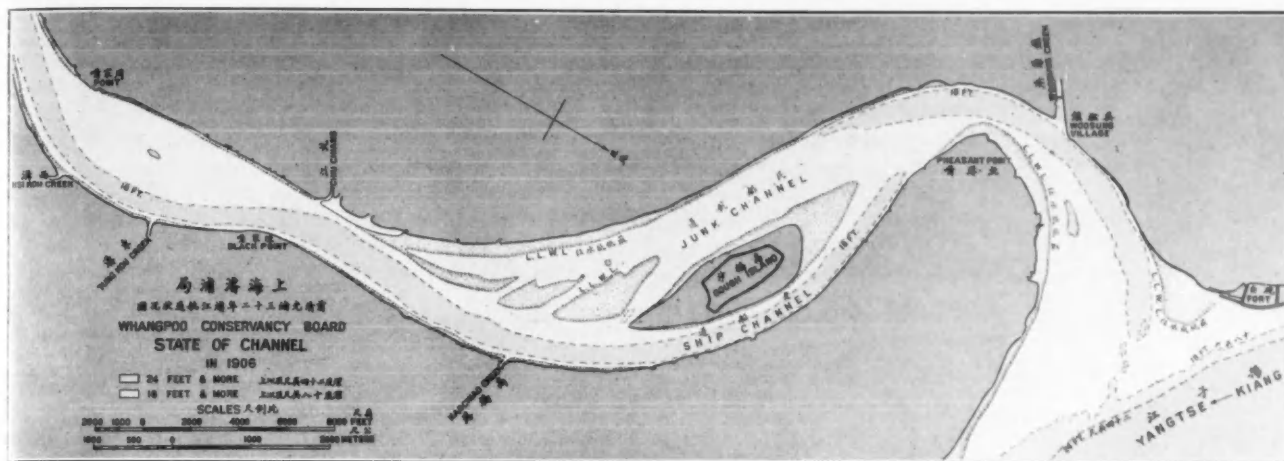
The Tidal River Harbour Problem

By HERBERT CHATLEY, D.Sc.(Eng.) M.Inst.C.E.

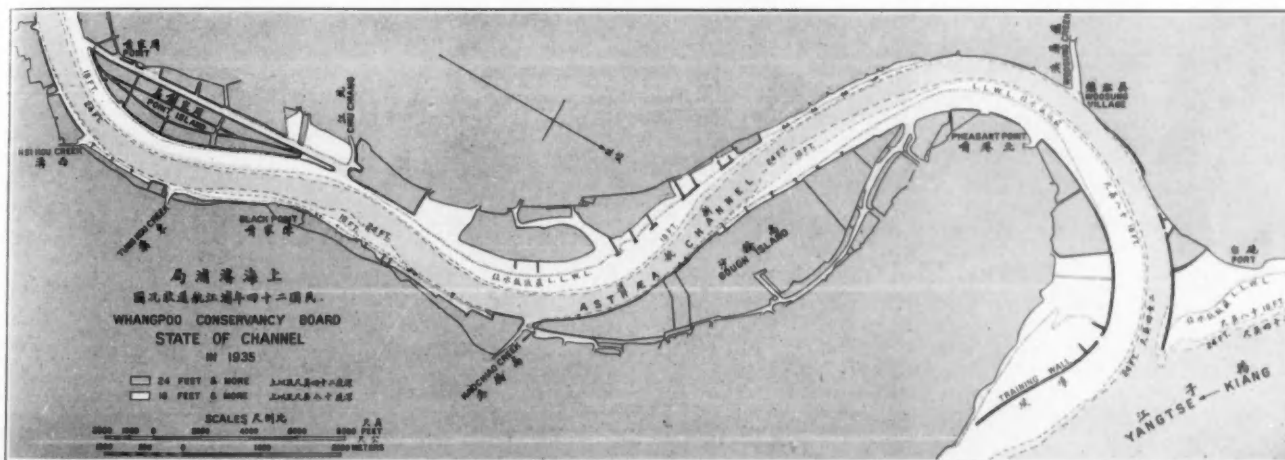
Conflict of Interest

For obvious reasons many harbours are located in the mouths of rivers and their improvement is interlocked with the question of river conservancy. In some respects there is no conflict of interest, but in others the two objects may be antagonistic, calling for a nicety of compromise. Thus in order to obtain scour and depth a regulated river may need to be narrowed in many places, and this narrowing reduces berthage area, especially

usually some section at which these conditions occur locally and this serves as a standard for the regulation, together with the necessary convergence of banks required to allow for the decrease of tidal influx. It would generally appear that, so far as regulation is concerned, foreshores, providing tidal magazine *additional* to this optimum, serve little or no purpose (beyond self maintenance), but the Dutch school strongly favours the retention of foreshores and the limitation of training walls to half tide level. The removal of sharp curvature also comes into the question. The existence of eddies and boils at sharp curves is clear evidence that the tidal energy is being destroyed, and the easing of curves therefore increases the tidal currents and adds to the tidal influx. Professor Gibson has recently shown that



Charts of Whangpoo River in 1906 and 1935.



Lower Shanghai Harbour, showing narrowing for improvement.

for small craft. Again, the deepening of a river to improve drainage and tidal influx increases the tidal range and the strength of the currents, which is adverse to easy navigation. Still again, navigational interests require depth alongside wharves to be sufficient for berthage, whereas the stability of river banks is greater when the depths near the shores are small. It is often, therefore, a problem for the engineer to decide between rival projects.

The navigational ideal waterway is straight, wide, deep all over with steep, well protected, high banks, still, clean and sweet water, and sheltered from wind.

The ideal river is sinuous to be stable, narrow enough to give maximum current velocities in the valley line, with bed sloping gently up to the banks, strong tidal currents which bring in sea water as far as possible and strong run-off currents which will carry off all upland drainage and wash silt out to sea.

The question of foreshore is particularly difficult. Foreshore provides a part of the tidal magazine, protects the banks against scour, serves for berthing small craft, and the lateral flow from it helps to concentrate the ebb into the channel. If by dredging and filling the cross section of a river is transformed into a narrow deep section with little or no foreshore, the tidal magazine is reduced nearly (but not quite) in proportion to the width, the stability of the banks is reduced, berthage for small craft is almost abolished and the lateral flow is negligibly small. The concentration of the stream increases the strength of the currents both by reduction of sectional area and increase of depth and reduces the bed surface on which friction occurs.

Tidal Magazines

There is an optimum width which gives maximum current velocity and maximum depth. In a natural river, there is

in tidal inlets the existence of obstructions may even *increase* tidal ranges by a resonance effect but the writer is inclined to the view that this effect, which conflicts with general experience in tidal rivers, is peculiar to tidal inlets with practically *closed heads* and is only to a limited degree applicable to tidal rivers.

It is clear that considerable caution must be observed in reclaiming foreshores and that in no case should the properly tapered channel be encroached upon, but on the other hand there are many cases in which such reclamation is beneficial to navigability, berthage and the provision of wharf area.

Berthage

The second important question is that of berthage. Where the deep water area is long in shape but limited, it is a common practice to allow the mooring of ships to buoys or dolphins in mid-stream. This is in some respects very objectionable. It obstructs the channel, both by the buoys, dolphins and the ships themselves, but still more by the attendant craft required for loading and unloading. Other things being the same, it is much preferable that all berthage should be along the shores, but obviously in a large port this may spread the handling points over a very considerable length of the river, and its desirability leads to the construction of excavated basins, with or without locks according to the tidal range. These may add to the tidal magazine. As far as the berths along the river banks are concerned the fundamental question is the reconciliation of the depths necessary with the stability of the banks and the maintenance of currents sufficient to keep the bed clean.

"Soil mechanics" has shown that "angles of repose" are not satisfactory indicators of the stability of banks in alluvial materials, but it is often feasible to construct wharves so that the under-wharf bank has a slope of one in two. If now the low

The Tidal River Harbour Problem

(continued)

water berthage depth desired is say 35-ft. and the spring tidal range is 15-ft. this means a wharf height (above the river bed) of 50-ft. and a location of the shore line 100-ft. back from the pierhead line. Apart from the fact that this makes the wharf a very large and massive structure, the question now under consideration is how far such a large low water depth near the shore is compatible with the regulation of the river. There are few rivers which at some miles above their mouths have central low water depths of this order, and certainly very few untrained rivers have them. There is, however, one feature about rivers which helps and that is their sinuosity. Much has been written for and against straightness as a feature of river regulation. There can be little doubt that if the bed is well protected, from a regulation point of view straightness is an advantage, but if the bed is erodible, a slightly sinuous stream is more stable in depth than a straight one. In addition, the sinuous river has its thalweg (deepest line) nearer to the banks than is the case with a straight river, and furthermore that depth is greater than would be the case in the straight river. Hence it follows that there are better possibilities of berthing large ships alongside shore wharves in a sinuous river. With erodible beds it is not desirable that the depth at the pierhead line should be greater than that in the channel, since such greater depth may stimulate the development of unduly large local currents which may hamper shipping, injure the wharf, and promote accretion on the opposite convex bank.

The practical results of this consideration on wharf building are:—

a. There is usually in a river harbour a maximum berthing depth possible, depending on the size of the river and the nature of the bed.

b. The deeper berths are confined to the concave banks.

c. The convex banks are very unsuitable for berthage.

How far the last disadvantage may occur is a matter of local considerations, but it can often happen that land areas, which otherwise are excellently suited for shipping purposes, cannot be so used because of the impossibility of creating adequate depths for berthage without disturbing the regime of the river. Such points may be of value for shipyards if the tidal ranges are sufficient to provide flotation for launchings, but are quite useless for berthing large vessels.

The existence of large current velocities is a drawback in a harbour, since it makes ships difficult to manoeuvre and, if berthed in mid-stream, they may drag from the moorings unless the bottom holds the anchors well. On the other hand when moving against the current there is better steering control at low speeds relative to the shores, and it is easier to leave the shore berths. Auxiliary craft may be subject to delays by the currents and row boats are in particular much affected thereby. From the conservancy point of view strong (but regular) currents are preferable since they imply large tidal influx and free drainage. On the other hand, the strengthening of the currents by regulation generally involves some lowering of the low water levels, which means, other things being the same, a reduction of the minimum navigational and berthage depths. Furthermore such strengthening of the currents usually raises the high water level, thus increasing the tidal range and the height of wharves, and possibly rendering the banks liable to flooding during periods of extreme tide or wind conditions. It should also be observed that, if the currents are strengthened by river improvement, at those bends where no change has been made to the curvature the eddies will be greater than before.

For all these reasons a certain amount of caution is advisable before inaugurating works which, however beneficial to the river, may be partially harmful to navigation. One case of interest is where, by a large cut off, the river is appreciably shortened between the wharves and the sea. The increase of tidal range at the wharves may sometimes be so much as to cause flooding of the wharf decks at strong spring tides.

There are other features of the matter to be considered. The strengthening of the currents may endanger wharf piling or bridge piers, the raising of high water will reduce headway under bridges and increase the slopes of pontoon approaches, the revetment of bank slopes may be injured and the waves caused by vessels will be increased since these vessels will have a higher velocity relative to the water when they have the same velocity relative to the shores. "Squat" will be enlarged for the same reason.

Nevertheless the river engineer will generally aim to produce the optimum velocity for self-filling and cleansing, since it would appear that it is more economical in the long run to adapt a harbour to the largest ships which it can reasonably accommodate than to refrain from the maximum improvement for fear of certain adverse factors. In some instances, the mere competition between ports drives authorities to unwarrantably large improvements, just as shipowners have been driven to build unnecessarily large ships, but it is a fact that for most cases a maximum of navigable depth has proved worth while.

Canadian Water Transport

Excerpts from Annual Report of the Canadian Department of Transport for the Fiscal Year from April 1st, 1938, to March 31st, 1939

Canals

The main canals opened to navigation about middle of April, 1938, and remained open until the middle of December, the Welland enjoying a season of 249 days and the St. Lawrence and Sault Ste. Marie canals 243 days. Due to shrinkage in United States ore and coal tonnage, the tonnage passing through the Canadian and United States locks at Sault Ste. Marie dropped more than 50 per cent., but there was, notwithstanding, a considerable increase in the movement of grains, and freight tonnage through the Canadian lock in 1938 increased by nearly 25 per cent. over that of the previous season.

Despite fairly heavy decreases in industrial commodities via the Welland Canal the total traffic using that canal showed an increase in freight tonnage of 7½ per cent. over the previous season. It amounted to 12,633,093 tons, which is the largest recorded since the first full season's operation of the canal in 1931, and exceeded the 1931 tonnage by about 43 per cent. There were 6,379 passages of vessels through the canal in 1938, the upbound and downbound passages being about equal in number. Freight traffic using the St. Lawrence Canals also created a new high record with 9,236,318 tons, compared with the previous record of 9,195,439 tons made in 1937. Heavy grain shipments were the chief factors in the increase.

During the year 128 cargoes of 211,208 tons were reported upbound through the St. Lawrence Canals from European, Newfoundland and Canadian and United States Atlantic ports. Norwegian vessels carried 65 of these cargoes, Canadian vessels 51 cargoes, Dutch vessels, six and one each of British, United States and Panama registry.

Freight rates on grains averaged higher than in 1937 throughout the year, the rate on grain ranging from 4 cents per bushel in April, to 7.5 cents in October. The average for the season was 5.57 cents, compared with 3.96 cents in 1937.

Canals administration, operation and maintenance expenditures during the fiscal year ended March 31st, 1939, totalled \$2,157,242.19, of which sum \$1,338,176.43 was chargeable to staff and \$819,065.76 to repairs. Administration expenses amounted to \$424,886.68, operation of facilities \$913,037.16, maintenance of properties \$783,023.17 and replacements \$36,295.18. Revenue (rentals) received during the year amounted to \$723,234.19.

Total expenditure on canals from their inception to March 31st, 1939, was \$338,107,406.27, and total revenues \$28,575,894.22. Of the expenditure, \$243,689,011.99 was on capital account, \$18,749,855.71 on major repairs and alterations, \$24,271,793.66 on operation (staff) and \$33,396,764.91 on maintenance.

Marine Services

Marine Services include the Aids to Navigation Branch, in charge of the construction, repair and maintenance of all light-houses, fog alarms, and other aids to navigation, such as light-ships, buoys and beacons, the maintenance and inspection of 2,000 public wharves, the removal of derelicts and wrecks which are obstructions to navigation, the administration of all agency shops and the Dominion Lighthouse Depot, Prescott. It includes, also, marine agencies, steamships, inspections, care of floating equipment and nautical services, the latter having to do with the Registry of Shipping, Examination of Masters and Mates, Navigation Schools, Shipping Masters and Masters and Seamen Regulations, Life-Saving Services, Receivers of Wrecks, Investigation of Wrecks and Casualties, Pilotage, Inspection of Live Stock Shipments, Port Wardens and Surveyors of Timber Deck Cargoes.

The administration of some two thousand wharves includes problems in respect of leases, commutations, storage and berthing rates, control of traffic and minor repairs. Wharfage collections, 1938-39, amounted to \$251,739.44. The branch also supervises some 300 public harbours, 160 of which are in charge of harbour masters. In addition, there is supervision over the administration of seven harbours under local Harbour Commissioners, namely: Toronto, Hamilton, Belleville and Trenton, in the Province of Ontario; Winnipeg and St. Boniface, in Manitoba; New Westminster and North Fraser, in British Columbia.

Canada's coasts are provided with 2,012 lights for the guidance and protection of navigators, 11 lightships, 1,236 light-keepers, 391 fog signals, and 621 gas and signal buoys, 5,784 unlighted buoys and numerous other aids. At December 31st, 1938, there was a total of 10,127 vessels on the Canadian Registry of Shipping, with a total of 1,279,181 net tons. Of the vessels registered, 2,193 were sailing craft and 7,934 steam vessels, of 1,403,067 gross tons, or 846,584 net.

Canadian Water Transport—continued

S. Lawrence River Ship Channel

The winter of 1937-38 was without unusual feature as regards ice conditions on the St. Lawrence River. Assisted by the three ice-breaking steamers, the river was freed of ice by April 13th. Buoy-placing began on April 12th, and the first ocean-going vessel arrived at Montreal on April 18th. The last vessel to leave Montreal departed on December 4th. Ice began to form in the river early in December, but it was not completely closed until January 4th.

The maintenance and operation of the signal service is under the operation of the Ship Channel Branch. All signal and reporting stations were in operation 24 hours per day throughout the season of navigation. This service continues to be of the greatest assistance to shipping by reason of the close contact with and the accurate reporting of all ship movements within the St. Lawrence river area.

The season of 1938 marked the first in the history of the St. Lawrence River ship channel in which all dredging was carried out under contract, the departmental dredging fleet having been disposed of during the season of 1937. The direction and supervision of the work, together with sweeping and minor maintenance remains with the department.

During the past season the so-called 35-ft. project, begun in 1910, was practically completed in so far as the original dredging is concerned, except for the cleaning up of isolated spots left over from the departmental dredging over a long period of years. As the dredged channel of approximately 90 miles now extends from the foot of Lachine Canal to deep water at St. Augustin, above Quebec, together with an additional 10 miles below Quebec opposite the Island of Orleans, the extent of the clean-up area may be realised. The work is, however, receiving constant attention and each season definite progress is being made towards its completion. Progress of this work during the season reached the stage where an additional 2½-ft. of available depth, at extreme low water of 1897, could with reasonable safety be allowed, and in September shipping interests were advised of the new limiting depth throughout the Ship Channel of 32½-ft. at E.L.W. 1897.

The present programme, which may be called the 35-ft. Improvement Project, to distinguish it from the original 35-ft. project, has at present in view the widening of the more important curves, together with certain of the straight sections, to facilitate safe navigation at these points. The former 35-ft. project was based on the extreme low water datum of 1897. As the river level has, for certain periods in more recent years, fallen below this datum, the new 35-ft. improvement project takes into account this lowering and is based on the extreme low level of 1934, the lowest to date.

The 35-ft. Improvement Project was begun in 1934, when the widening and deepening of the channel through Lake St. Peter, at St. Augustin and Barre à Bouvard was undertaken, and has been continued in these areas since that time, along with the completion stages of the former 35-ft. project in other areas. The latest contract, that of 1937, deals almost entirely with the new project, except for maintenance and certain harbour improvements. At the end of the season under review approximately 23 miles of improved channel had been completed.

Correspondence

To the Editor of "The Dock and Harbour Authority"

Dear Sir,—

I was very interested in "The Measurement of Tides and Waves by Echo-Sounders," which appeared in the December issue of your paper.

The writer mentioned five difficulties which had to be considered and to these I would add:

- (a) Silinity, and
- (b) Silt content,

as both these have been found to have considerable effect on soundings taken by an Echo-Sounder.

At the end of the article the writer gives a note on the current methods of recording tide levels in open estuaries or seaways. I see no mention is here made of the Pneumatic Tide Gauge, and from experience I am inclined to consider the Pneumatic Tide Gauge with a Recorder attached to be one of the best methods of observing the rise of tide.

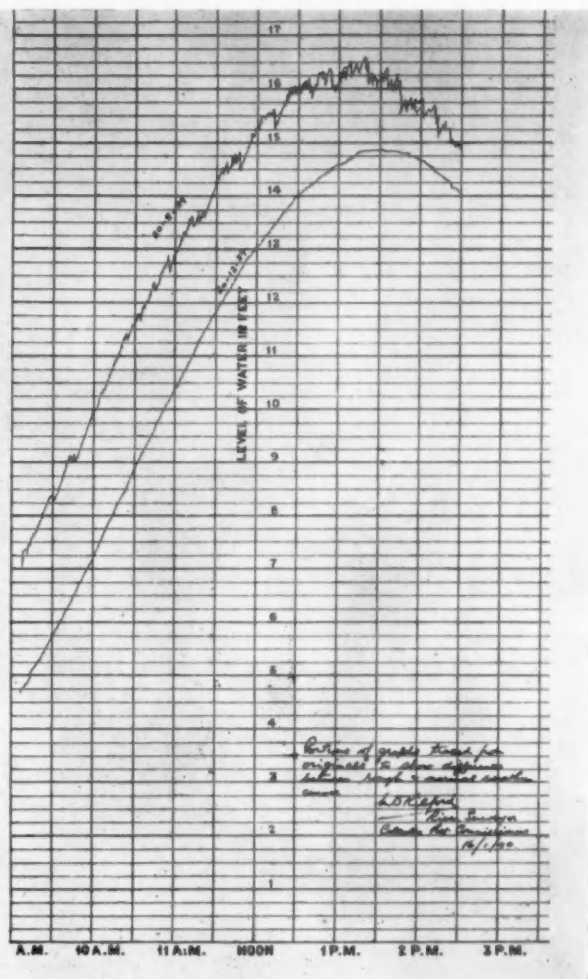
Float-operated recorders are all very well, but the maintenance of a float chamber is not always an easy matter and may prove a very expensive item in open estuaries.

In 1933 the Commissioners for the Port of Calcutta purchased a Pneumatic Water Level Recorder and installed it on the south-west corner of Saugor Island. A glance at the Chart of the River Hooghly or the Bay of Bengal will show that this is a very exposed site, especially during the south-west monsoons.

The Air Bell was established in the river some 1,200-ft. from the Recorder and at first was inside a stilling chamber. After two monsoons it was found impracticable to maintain the stilling chamber and it was eventually removed. This has, of course, interfered with the clearness of the graphs, but not to the extent anticipated. Even in bad weather the graphs are still readable to within 3-in.

As a precautionary measure the pipe lines and air bells were duplicated. It was very difficult to maintain these two pipe lines in such an exposed position, but the substitution of strong rubber hose for the small copper piping is a great improvement.

The graphs are on fairly large scales. Vertically 1-in. = 1-ft. rise or fall and horizontally 1½-in. = 1 hour.



I enclose herewith on thin paper a copy of a portion of the graphs as recorded on 20.8.39 and 31.12.39 to show the difference between bad and good weather curves.

The Pneumatic Water Level Recorders have proved so successful that four more were ordered last year and would have been in operation by now had it not been for the war.

Yours faithfully,

M. D. KILFORD,

River Surveyor,

Calcutta Port Commissioners.

16th January, 1940.

The Dock and Harbour Authorities' Association

Election of Officers for Ensuing Year

At the annual general meeting of the Dock and Harbour Authorities' Association, held in London on 21st February last, Lord Ritchie, of Dundee, was re-elected President for the eleventh successive year.

The four retiring vice-presidents, Sir Richard Holt, Sir Ernest Herdman, Sir Frederick J. West, and Sir Alfred Read were re-elected and the fifth vice-president, Sir Arthur Sutherland, was elected at the meeting.

Lieut.-Col. J. T. C. Moore-Brabazon, M.C., M.P., was re-elected Parliamentary chairman.

The following members were elected to serve on the Executive Committee:—Messrs. Albert Blacklock (North-East Coast of England), B. O. Davies (East Coast of England), R. T. Garrett (London district), R. H. Jones (Bristol Channel), J. G. B. Beazley (Liverpool and N.W. district), Leslie Roberts (Manchester Ship Canal), G. W. Service (West Coast of Scotland), H. Giles Walker (East Coast of Scotland), M. J. Watkins (Northern Ireland), Major J. B. Hollway (Eire), and Harry Parsons (South Coast district).

New Wharves at Port of Shoreham

During the past 18 months, three new wharves have been constructed at Shoreham by Messrs. Christiani and Nielsen, Ltd, of Westminster, London S.W.1, the first for the Shoreham Wharfage Co., Ltd., the second for Messrs. Beves and Co., and the third for Messrs. Tarmac, Ltd. A short detailed description of the constructional details of each wharf are given below.

Wharf for the Shoreham Wharfage Co., Ltd.

This wharf, which is 485-ft. long, is of timber construction, consisting of king piles 35-ft. long driven at 10-ft. centres. Immediately behind were driven 12-in. by 6-in. sheet piles finishing at a level of 18-ft. 6-in. below the top of the wharf, and capped with a waling. On top of this was placed 4-in. planking laid horizontally behind the king piles, surmounted by a 12-in. by 12-in. timber capping beam.

The front is anchored back by upper and lower ties to a reinforced concrete anchor block 38-ft. behind the front, at intervals of 10-ft.

Behind the wharf a crane track was constructed, consisting of reinforced concrete crane beams 18-ft. apart, supported by reinforced concrete piles braced together by cross beams at the top.

All the work was performed from a temporary staging constructed by cantilevering out from the adjoining wharf by a special pile frame and moving forward over the staging piles as they were driven.



Work in progress at Shoreham Wharf.

straightened out before backfilling was commenced.

The space between the front of the old wharf and the back of the new was filled for the lowest 3-ft. or 4-ft. with a weak concrete, the remainder of the space being filled with hard dry filling.

Difference in head between the outside water level and water at the back of the wall is eliminated by the provision of flap valves, built into the sheet piling at intervals, immediately above the weak concrete backfilling.

The top of the steel sheet piling was finished off with a capping of reinforced concrete, surmounted by a 12-in. by 12-in. timber waling.

Timber fenders of 12-in. by 6-in. section 21-ft. 6-in. long were secured to the sheet piling at intervals of 10-ft. 6-in. These were secured by means of tee-headed bolts, the tee ends being passed through slotted holes previously burned in the steel piling. The tee ends were prevented from turning too far by bearing against the interlock of the piles. This arrangement provides for the easy replacement of worn fenders.

The end of the wharf frontage was finished off by a return length of 33-ft., forming an angle of 70° with the front. This return length was anchored by ties to the front, special castings being made for the ends of the ties, fitting into the internal angles of the piling.

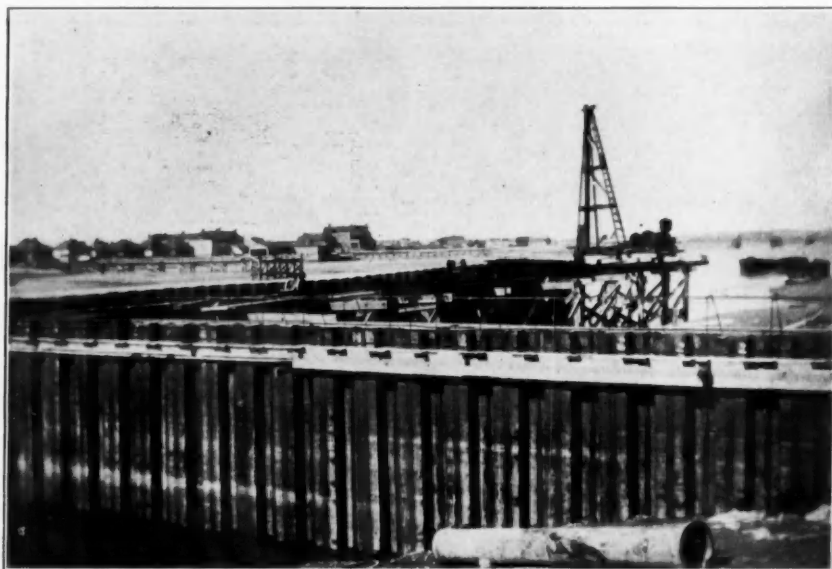
Copper-bearing steel was used for the piling, and the exposed lengths of ties were tarred and wrapped with hessian. Pile-driving was carried out by means of a small pile frame with a 30-cwt. drop hammer cantilevered out from the old wharf, excepting the last 80-ft. and the return end, where temporary timber staging had to be provided.

The work on both the above wharves was carried out under the supervision of Mr. D.M. Francey, the Consulting Engineer.

Wharf for Messrs. Tarmac, Limited.

This wharf has a frontage of 260-ft. with a return of 90-ft. alongside the public hard, and at the other end a return of 95-ft.

The structure consists of copper-bearing steel sheet piling 33-ft. long, driven along the whole length except for 55-ft. at one



Wharf for Tarmac, Ltd., nearing completion.

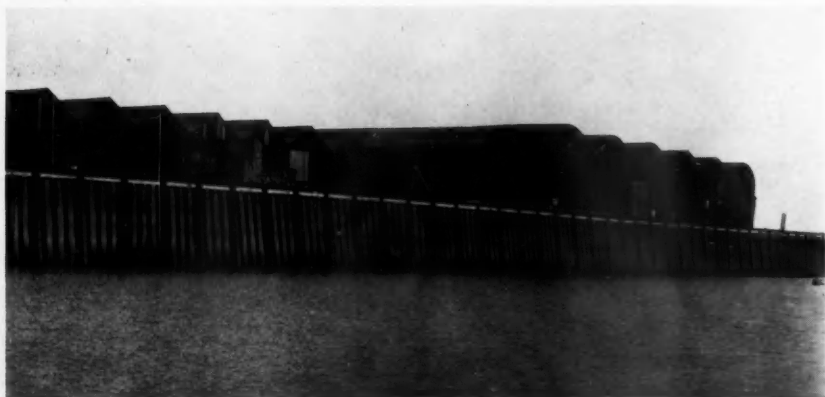
Wharf for Messrs. Beves and Company, Ltd.

A length of 453-ft. of steel sheet piled wharf has recently been added to the length of 283-ft. at Messrs. Beves and Company's Wharf, which was completed in 1937, thus making a total frontage of 736-ft.

The greater part of both lengths was driven in front of the previously existing wharf. Owing to the projection of the foundations of the old wharf, it was found necessary to drive the piling at a slight rake. The steel sheet piles were Dorman Long Krupp K11 section, 35-ft. long, driven 12-ft. deep into the foreshore. Behind the sheet piling at a depth of 4-ft. 6-in. below the wharf, a continuous horizontal beam consisting of two 10-in. by 3½-in. channels was placed, secured by 1½-in. diameter bolts to each pair of piles.

Anchor bolts 2½-in. diameter placed between the channels and secured to the sheet piling were spaced at intervals of 10-ft. 6-in. along the wharf. The anchor bolts were 35-ft. long, the back ends being embedded in a continuous anchor constructed of reinforced concrete.

The anchor bolts were each made in two pieces, connected together with a coupling, in order to enable inequalities occurring during the driving of the sheet piling to be



View of the completed Beves' Wharf.

New Wharves at Port of Shoreham—continued

return end, which was constructed of timber. The steel sheet piling was surmounted by a stout capping beam of reinforced concrete, tied back at intervals to a continuous anchor beam of reinforced concrete.

The piling was driven from a staging constructed by cantilevering out from the public hard with a special pile frame, and moving forward over the staging piles as they were driven.

The whole of this work was designed and constructed by Christiani and Nielsen, Limited.

Book Review

Travaux Maritimes—Tome III—Ouvrages Interieurs et Outillage des Ports. (Maritime Works, Vol. 3; Internal Structures and Harbour Equipment). Messrs. de Joly, Laroche, Watier & de Rouville. Paris, 1940. Dunod. Price 185 francs paper covers, 207 francs bound. 703 pp., large 8vo.

This volume, although part of a large work produced by a group of professors at the National College of the Ponts et Chaussées, is complete in itself and will be of great value to the port engineer and administrator. While it is definitely a text book for students at the college and necessarily deals primarily with French practice, its scope is so wide and the principles laid down so general that it will form a useful reference book for the practising engineer.

There are eight chapters, as follows:—

1. The internal arrangement of ports.
2. Riparian structures, and landings.
3. Dry docks and launchways.
4. Land bridges over harbour channels.
5. Maintenance and deepening of port approaches.
6. Port equipment.
7. Administration of commercial seaports.

The fifth chapter, extending to 160 pages, deals with flushing basins, dredging, rock removal, spoil disposal, dredging prices, ice breaking and wreck removal, and is of particular interest. To some extent it covers works outside the harbour area, thus making the volume more comprehensive than might appear from the title.

The fourth section of the first chapter, entitled "Proportions between the various elements which make up a commercial port," will be of general interest as it endeavours to lay down rules for the relation between the length of the quays or the land areas and the water surface of the port and again for the tonnage passed over unit length of quay, or handled on unit area of land surface or unit area of water. It is also pointed out that in new ports it is desirable to allow as much as fifteen times the quay frontage in the total length of rail service.

The subjects of dry docks (both the basin and floating types) launching of ships, moveable bridges, and quay walls are particularly well handled.

The discussion of the stability of quays is perhaps not so advanced as one might have expected from such a source. There is no reference to the new "soil mechanics" or to the tendency, now very well established, of wall subsidences to occur along a curved shearing surface, although several failures are illustrated which have obviously happened in this way. Resal's rules are apparently still regarded as a standard in France, just as Rankine's were, until quite recently, in England. The work of Terzaghi has rendered both out of date. Similarly there is but little said as to the peculiar problems which arise in connection with pilework and sheet piling.

In connection with the latter, it is rather remarkable how little attention is given to the question, in all text books, of the area of anchor plates and anchor piles behind a sheet piling. The logical method is surely to allow such an area that, against the "active" pressure of the earth-fill on it, the total force will be of the same order as that of the safe strength of the anchor rods, whereas the usual practice seems to be to assume that the "passive" pressure will always have an opportunity to develop. The cost of putting in large anchor surfaces is usually small and the additional security which such large surfaces give is so valuable that one is at a loss to understand why it is so rarely sought for. Thus in the work under review (p. 93) there is illustrated a sea wall at Kenitra in Morocco with two lines of anchor rods terminating in anchor plates and back-nuts. The anchor plates are shown to be about six times the diameter of the rods, which seems absurdly little. This remark is not intended to be a criticism of the design of that particular wall but a general criticism of all practice in this matter. If this is all the anchorage required it would be almost as good just to use an anchor rod with a corrugated surface and no anchor plate at all!

As the Authors say on this same page:—

"The difficulty in the use of sheet piling for the front walling of a quay consists less in the choice of the type of sheet pile than in the constitution of the anchorages destined to hold it in place."

On pp. 447 to 451, there is a discussion of the Fruhling type of dredger. Unfortunately the only one illustrated is the old "Amphitrite" built by Schichau in 1905, and no reference is made to the much better vessels constructed in later years by Scotch, Dutch and German builders, in particular those built for the La Plata and for Shanghai. The authors say (p. 448):

"In order that the dredge shall give the maximum output, it is necessary that the drag-head shall be kept at a suitable depth, without penetrating too deeply. The suction pipe is therefore suspended by steel cables and tension bars from a derrick provided with a power winch."

This is, of course true, but does not bring out two important points:—

(a) The level of the draghead must be kept by delicate control so that the vacuum is as high as is consistent with flow of the spoil.

(b) The weight of the drag head must be such that it will penetrate the soil to an extent sufficient to assure a "bite." In this connection an old dredging master once told the reviewer of an incident which is rather instructive. Contract trials were being carried out on a drag-suction dredger and to the disgust of the officials no output of consequence was being obtained. In despair the contractor authorised the dredging master to drop the head fairly heavily on to the sea bed, and immediately the dredger commenced to operate satisfactorily. There are other similar cases in which drag-suction dredgers have been abandoned because the head would not penetrate the surface, due to lack of its own weight or to lack of propulsive power.

The authors mention the Carlesimo type, which thrusts instead of drags. So far as the reviewer is aware, this promising machine has had little use in recent years, since few engineers have the temerity to adopt a device which appears so liable to serious accident. The inventor, with great ingenuity, devised three successive releases in case of accident, but even so, one hesitates to use a method which is, otherwise, clearly the one which gives the least resistance.

The authors do not mention the very important feature which appears in the American and Chinese drag-dredgers, viz.: the centre well. While this has a bad effect on the distribution of the machinery it is of great advantage in cross currents and appears to be the only method of enabling the vessel to be steered satisfactorily in such conditions.

Considerable space is given to the "Pierre Lefort" and the "Victor Guilloux," with their twin semi-flexible suction pipes.

In the section of the book on port equipment there is an adequate treatment of cargo handling devices, but perhaps more might be said on the subject of pneumatic methods of handling materials. One page is hardly sufficient for the importance of grain handling. It is stated (p. 598) that the Poulson conveyor only uses one-tenth the power of a pneumatic grain elevator, but the latter "has" the great advantage of removing the dust from the grain and above all of cooling it when it has commenced to warm up in the humid holes of barges and ships. Surely the great advantage of the pneumatic system is its flexibility and simplicity.

The final chapter deals with the administrative system in French ports, and is of considerable interest in view of the great variation in this country of the methods of port control. One section describes the systems in certain foreign ports. There is a curious error on (p. 675) where the London management is termed the "London Harbour Authority," instead of the "Port of London Authority." There does not appear to be any reference to that vexed subject, riparian rights, or to the question of expropriation of private property but this is doubtless reserved for special texts on the legal aspects of port control.

It is interesting to note (p. 672) that, at long last, the French Government has authorised the institution of free zones in French colonial and maritime ports where there is a demand for such. The law on this matter was only formulated in May, 1938, and it is not stated how far it has been taken advantage of, but simply "that it is possible that our overseas dependencies may be the first to profit from this latitude."

The economic aspect of port operations is well described. Comparative figures for dredging costs are given and on (p. 684) it is mentioned that a ship of 2,193 tons register, discharging 85,750 sacks of linseed, paid in port charges and expenses, including unloading, some 88,780 francs, i.e., about one franc per sack. The weight of the cargo was 5,335 tons. The port in question is not named, but the suggestion is implied that these are average figures for a French port.

Considered as a whole the book is excellent, and it is to be hoped will have a wide circulation, not only in France, but also in other countries. The illustrations are clear and numerous and there are but few matters in which the treatment is not fully sufficient to serve the authors' aim, i.e., to provide a sound text for port engineers.

H. C.

Ports and Free Ports*

By THOS. E. LYONS.

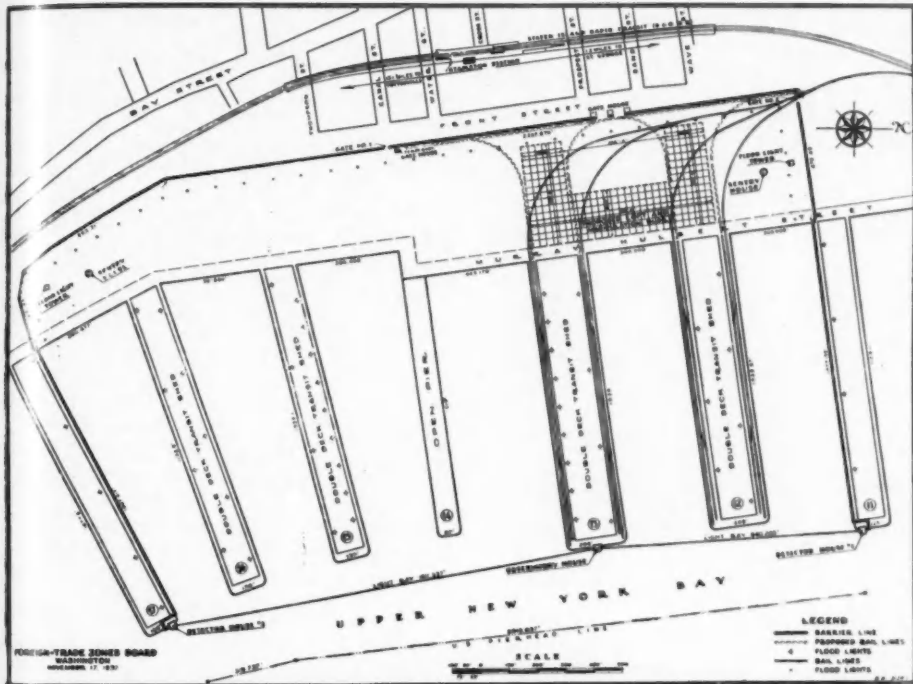
At this, the second convention of your Association before which I have been privileged to appear, I feel that I have been accepted as an honorary member of undesignated standing. Your patience in listening to me I can attribute only to your interest in the foreign-trade zone as a desirable and even necessary complement to the facilities of a modern and complete port.

The function of a port has not been as thoroughly understood or encouraged in the United States as in some other countries. Since the war, increasing attention has been given to ports and great progress has been made in most of our waterfront cities. There have been and still are many obstacles needing elimination or abatement before ports are free to perform the services usually rendered by an efficient organization.

ment, but if the other facilities of the port are not co-ordinated with it, much of the terminal engineer's work goes for nothing. Experience has shown that a centralized co-ordination of piers, transit sheds, warehouses, railways, belt lines, motor trucks, lighters, and handling equipment is a prime requisite. Rates must be reasonable and equal all over the port for the same services. Freedom of movement between piers, between warehouses, and between railroads is essential. Port promotion, independently and in co-operation with railroads and steamship lines, is too often neglected though the returns from such effort have proved its worth.

Port Efficiency

How should a port be operated? This brings us back to the analogy of a private enterprise. The brief answer is "efficiently." When we speak of a port we mean all the waterfront facilities of a city or a particular locality. If these waterfront facilities are divided up among a number of independent owners and operators, the chances of obtaining the proper co-operation and co-ordination are in reverse ratio to the number of separately-controlled terminals. That is not port efficiency. If the piers are inadequate to handle the traffic coming to the port, congestion is the result. That is not port efficiency. If the piers are not modern so that handling costs are kept at the minimum, that is not port efficiency. If there is not a direct connection of the railroad and the motor truck with the vessel at the pier, transfer costs and congestion increase. That is not port efficiency. If there are not shipside warehouses for transit cargo to eliminate unnecessary handling and cartage, the port does not have efficiency. If the costs of dockage, the costs of wharfage, the costs of transfer, the costs of warehousing are not equal for the same services, and are not reasonable at all points in the port, that is not port efficiency. If a port is not on its toes to bring cargo and ships to its piers and new industries to the community, that port is not efficient. So much for efficient port organization, though the few points mentioned by no means exhaust the list.



Foreign Trade Zone No. 1, Stapleton, Staten Island, New York.

Port Operation

The development and operation of a port is usually a long-range proposition, and somewhat similar to that which confronts an industry entering a new market. The tributary territory must be surveyed; the type of commerce that is likely to develop must be determined; the port facilities must be planned in accord with special conditions and type of commodities; tariffs must be adjusted to the most efficient level; there must be realization that income is not likely to equal expenses or to return costs for some years in the future, and finally, that sales promotion and solicitation are just as important to the success of the port as to any industry. To most ports, Emerson's principle of a mouse trap and a hermit has become a slogan or a way of life. This smug attitude is costing long-established ports millions in commerce to other, more aggressive localities. Particularly is it true of ports blessed with natural advantages, fine harbours, large and rich hinterlands, and locations on principal trade routes. Perhaps some excuse may be found for this attitude in ports where the terminals are modern and adequate, but it is certainly otherwise when there is a lack of co-ordination or a lack of proper port facilities in a harbour favoured by nature. Business can be lost to another port and it may not necessarily be one of our own, just as surely as business can be lost to a competitor, and for the same reasons. Unfortunately, it apparently takes longer for a port to realize that it is losing business, and the reasons, than it takes in private industry. Even after it does have such knowledge, remedial action is often delayed for years to the port's further detriment.

Port Functions

What are the functions of a port? Essentially they are to provide the meeting of land, air, and water transportation with space for the convenience of passengers, mail, and the holding of merchandise awaiting transfer between buyer and seller and between water and land. The engineer may plan a terminal of the finest construction, having the most modern handling equip-

Port Problems

The problems facing port authorities are many times more difficult of solution than those of a business enterprise. Unfortunately, it is not a case of knowing what to do and doing it. Expediency, divisions of authority, lack of capital, conflicting policies of railroads and steamship lines, opposition from private terminal operators, warehousemen and draymen, all make more difficult the satisfactory solving of problems confronting the port authorities. Leaving the development of the port to railroads, steamship lines, private industries, and pier owners rarely results in building a modern port. It is a shirking of civic and state responsibilities not to have a pattern upon which a port logically may be developed and operated. It is an incalculable waste of money and land to permit the uneconomic use of waterfront property. An attractive, well-planned port will derive more revenue and more satisfaction from users than any amount which may have been spent to bring it about.

Ports and Free Ports

You may ask how does all this tie in with foreign-trade zones? I emphasize again that the foreign-trade zone is a desirable complement to the facilities of a modern and complete port. It is a condition precedent to zone establishment that the area of a port so set aside *must* have shipside warehousing, *must* furnish direct connection between ship and rail, *must* have sufficient space for minimum handling in the dispatch of cargo, and *must* provide all necessary facilities for the manipulation of merchandise. The foreign-trade zone act sets out a public yardstick of essential facilities by which existing ports and terminals may be compared. Because of these requirements a foreign-trade zone can set an example for the development of the rest of the port. But this is not all, for the zone offers to cargo privileges not otherwise available in a port, and so rounds out the services that a major port should be able to provide.

Mobile Foreign-Trade Zone

You are probably wondering why, if all this is true, the foreign-trade zone at Mobile was abolished. I can say this, that the zone there was never given a chance to prove its worth.

*An Address delivered to the Pacific Coast Association of Port Authorities at the Twenty-sixth Annual Convention, Oakland, California, August, 1939.

Ports and Free Ports—continued

Opened in July a year ago, it was closed in January following several weeks of discussion, just when merchandise consigned to the zone began to arrive. In spite of all that is claimed for the principle of foreign-trade zones, it is not a miracle worker. A port or terminal would hardly be expected to pay its own way within six months of its establishment.

The Foreign-Trade Zones Board does not feel that a port community should undertake the establishment of a zone except as a long-range proposition and should not expect the operation to pay monetary dividends during its early stages.

New York Foreign-Trade Zone

The New York Zone is fortunate in having been sponsored by public officials who believe whole-heartedly in the free port principle and who have nursed the zone along until it is now out of the experimental stage. Occupancy of its existing storage and manipulation facilities has reached approximately 90 per cent. Extensive additions are under construction, that when completed, will provide a general utility building having space for dry storage, cold storage, and merchandise manipulation, and an 11,000 ton vegetable oil tank storage and pump system.

A glance at the figures for 1938 shows that the commodity

This quite obviously, eliminates any need for a warehouse entry in order to inspect and sort the fur. Such entry, as you know, creates problems of proper valuation, production of consular invoice, and the liabilities under the bond.

In the case of an importer of canned corned beef, his customs broker explained to him the possibilities of the zone. As it has worked out, the importer is building a substantial trade and is far ahead of his competitors. The advantages of the zone, as explained by his customs broker, are storage of his product for unnumbered periods of time and the fact that the U.S. Department of Agriculture does not inspect his canned meat before customs entry. In effect, this means the importer has an opportunity to examine each shipment and recondition, return, or destroy defective cans. The importer is enabled to maintain a spot stock of unlabelled cans, ready for quick delivery in this country and Canada with the buyer's own label, a tremendous advantage over competitors and an impossibility without the zone.

A well-known explorer recently used the zone to collect and prepare his equipment for an extended trailer journey through Asia. Much of his equipment was highly dutiable had it entered customs territory, and in this regard the zone was of real service to him.

Perhaps the most spectacular sight at present in the zone is the thousands of boxes, cases, crates, and lift vans containing the furniture and personal effects of European refugees. It is also a vivid and pathetic commentary on the European situation. In this movement, the zone is serving a vital need. Under our customs laws, the only logical alternative to the zone is the general order warehouse with its limited capacity, high costs, and one year storage limit. It is possible to enter such goods as conditionally free under a six month's bond, but there are few customs brokers or others that are willing to take the risk and responsibility of such a procedure. As the problem solves itself in New York, personal effects that customs brokers consider a poor risk are sent to general order, and the rest are filling the New York zone in a very satisfactory manner.

To the Port of New York, the zone furnishes an example of a complete terminal, having a published tariff of all charges, something the port has not seen in modern years.

To the foreign trader, the zone is a sanctuary for his goods, where he can deposit them with customs immunity while he decides how and where he will market them.

The Pacific Coast Association of Port Authorities is doing and has done much to improve port service. To-day, Pacific Coast ports are among the best equipped and most modern in the country. It is for this reason those ports have been watching the progress of the New York foreign-trade zone with great interest. The proof of this zone's success lies not only in the figures of its operation, but also in the enthusiasm of all that use its facilities or recommend its use to others.

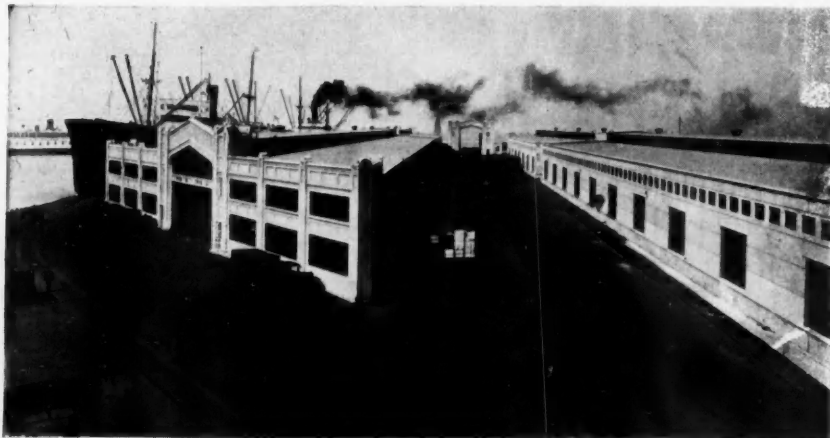
DISCUSSION.

Mr. Mark H. Gates said: My good friend, Tom Lyons, has said that he feels he has been accepted as an honorary member of this Association with undesignated standing. He says further that our patience in listening to him can be attributed only to our interest in Foreign Trade Zones. I know I can say for the membership of this Association that, if Foreign Trade Zones had never been heard of, Tom Lyons would still be eligible and welcome to membership, because of his personality and good fellowship and the fact that he attaches enough importance to this Association to make the trip across the Continent each year to attend its meetings.

I do not believe that the closing of the Mobile Foreign Trade Zone without a longer trial, nor whatever success has come to the New York Zone, is sufficient proof of the future of such zones in this country. But, I do believe, as I have said before, that two things are essential if these zones are to be as successful in the United States as they have been in foreign countries. One is that the law must be amended to allow greater latitude and the other is that the Foreign Trade Zones Board rules must be liberalised to permit of more practical operations.

I realise that the law governing the operation of these zones was passed by the Congress and that the Foreign Trade Zones Board cannot go beyond the provisions of this Act and I will admit that amending the law to the extent of allowing manufacturing and other desired changes within the zone may be difficult of accomplishment. But, I contend that the Foreign Trade Zones Board can do much to encourage the establishment of zones in various United States ports by taking a more practical view of the situation and still stay within the letter and spirit of the law.

(concluded on page 125)



Pier 45, San Francisco, with total covered area of 416,564 sq. ft. which is considered admirably adapted for a Foreign Trade Zone.

tonnage entering the New York Zone was 267 per cent. greater than in 1937, and commodity values were 390 per cent. greater. In 1937, 97 lots of merchandise were handled, while 1,285 lots were handled last year, an increase of 1,300 per cent.

A further glance at the figures indicates that in the first five months of 1939 the commodity tonnage handled equalled the tonnage of all of 1938, while commodity values for the five months period exceeded the entire twelve months figure of 1938. This suggests that for the year 1939, the 1938 ratio of increase will be maintained and possibly exceeded.

In a recent report of the deputy collector of customs at the zone, it was stated that since opening in 1937, the zone had received 4,300 consignment lots weighing 100,000 tons and valued at 15 million dollars. A total of 775,000 packages of various description have gone to the zone and 50 ocean freighters have discharged cargo there.

Commodities have come to the zone from 19 European countries, 11 Asiatic countries, 7 African countries, 5 South American countries, 6 North American countries, and from the United States, Puerto Rico, and the Virgin Islands.

From the zone goods have been re-exported to 13 countries of Europe, 4 Asiatic countries, and Australia, 3 African countries and Madagascar, 5 South American countries, 9 North American countries and the United States.

Duties collected on merchandise entering the United States from the zone amounted to \$656,534 during this period.

Among the more enthusiastic believers in the New York zone are customs brokers. These men, to whom the solution of problems of foreign commerce and the tariff mean their daily bread, have advised many of their clients of the advantages of the zone.

Upon the advice of a customs broker, a Scandinavian exporter brought pictures and picture frames to the zone. These arrived at different dates, by different vessels, and under different tariff classifications. Ordinarily, each lot would have to be entered separately, but by using the zone, pictures and frames were assembled and were then entered under a single entry. The benefits of a single entry are obvious. Not only that, but case lots were broken down, not permissible in bonded warehouses, and buyers were able to inspect individual pictures and frames and give orders for preferred combinations for assembly before delivery.

Another customs broker said that he advised a client, who is a fur buyer, to use the zone for the intransit inspection of fur scrap prior to reconsignment abroad for manufacture into plates.

Dock and Harbour Authorities' Association

Report of the Executive Committee for the Year ended 31st December, 1939, presented to the Association at the Annual General Meeting held on February 21st, 1940

The Committee present the Twentieth Report of the Proceedings of the Association.

Meetings

The last Annual General Meeting was held in London on the 22nd February, 1939. The Executive Committee have met six times and Sub-Committees ten times during the year.

A number of Meetings have as usual taken place between representatives of the Association and Government Departments and other bodies.

Thirty-three Circulars on various matters, including the Interim Reports (May and September) have been issued to Members.

Executive Committee

The Committee for the tenth successive year elected Lord Ritchie of Dundee, the Chairman of the Port of London Authority, as their Chairman.

The Committee record with great regret the deaths in October and November respectively of Mr. William F. Robertson, and Vice-Admiral Sir H. Percy Douglas. Mr. Robertson had been Chairman of the Clyde Navigation Trust, and a Vice-President of the Association since 1931. Admiral Douglas had been Chairman of the Dover Harbour Board, and had represented the South Coast district on the Executive Committee since 1936.

Sub-Committees

The list of Sub-Committees appointed for 1939 is set out on page (iii) of last year's Report. During the year Mr. J. Wilson, General Manager, Clyde Navigation Trust, was added to the Parliamentary and General Matters Sub-Committee, and Mr. J. D. Easton, Clerk to the Leith Dock Commission, was added to the Dock and Factory Matters Sub-Committee.

Members

The Association in 1939 comprised 56 Authorities dealing with a tonnage (excluding Pilotage, Conservancy and Eire Authorities, not covered by the Board of Trade Returns) representing over 75 per cent. of the total tonnage of vessels arriving and departing with cargoes at and from the Ports of the United Kingdom.

One Authority, the Workington Harbour and Dock Board, joined the Association since the last Annual Meeting.

Bills in Parliament

The under-mentioned Bills were considered and amendments sought where necessary to protect the interests of Members.

Session 1938-39

(1) Public Bills which Passed into Law

Chartered and other Provisions)	Bodies	(Temporary	Royal Assent, 1939
Civil Defence	Nov. 16th
Coast Protection	July 13th
Emergency Powers (Defence)	July 13th
Finance	Aug. 24th
Limitation	July 28th
Local Government Superannuation	May 25th
Military Training	April 28th
Ministry of Supply	May 26th
Prevention of Fraud (Investments)	July 13th
Reserve and Auxiliary Forces	April 28th
War Risks Insurance	May 25th
			Aug. 4th

(2) Public Bills which did not Pass into Law

Water Supply
Water Undertakings
Workmen's Compensation

The above list contains very few of the great volume of Emergency Bills which received the Royal Assent last Session. In fact, of the 120 Public Bills which passed into law, 59 can be described as emergency legislation and were passed very rapidly and in most cases without amendment.

The attention of Members was called to some of the more important of these Emergency Acts by Circular No. 474 dated 8th September.

Limitation Act, 1939

This Bill received the Royal Assent on 25th May. It will be remembered (Report for 1938—pages 6 and 7) that the Bill was introduced in the Session 1937-38, but through lack of time had to be dropped after passing the House of Lords (1st House).

The Bill had a quick passage in 1939, and attempts made to delete the amendment to Clause 22 which had been obtained for the protection of public authorities at the instance of the London County Council, the Association of Municipal Corporations and this Association were unsuccessful.

This amendment provided that in the case of disability of infancy or unsoundness of mind the action must be brought against the public authority within a year of the accrual of the right (instead of at any time before the expiration of one year from the date when the person ceased to be under a disability or died), unless the plaintiff proves that the person under the disability was not at the time when the right of action accrued to him in the custody of a parent.

Coast Protection Act, 1939

This Private Members' Bill received the Royal Assent on the 13th July.

Members were informed by Circular No. 457, dated 21st March, of the proceedings in Standing Committee B on the above Bill when an amendment (Clause 2 (2)) had been passed which gave full protection to the conservancy powers of a harbour authority, but that two further amendments pressed for by the Association had not been obtained, viz.:—(a) An amendment to give harbour authorities complete exemption in relation to powers for constructing works along the coast or on the banks of an estuary or tidal river, and (b) amendments to provide that an Order of the Board of Trade which affected rights or privileges conferred by Acts of Parliament should be provisional only if opposed and should require confirmation by Parliament.

As regards (a), an amendment adding to Clause 2 (2) the words in black type below, was moved by the Association's Parliamentary Chairman (Colonel Moore-Brabazon) and accepted:

(2) Nothing in this Act or any order made thereunder shall take away, diminish or prejudice any rights, powers or privileges in relation to conserving, maintaining, or improving the navigation of a tidal water, or constructing, improving, repairing or maintaining a dock, wharf, pier, embankment or other work conferred by any public, general, or local or private Act on any harbour authority, conservancy authority, or navigation authority.

As regards (b), a strong case was put forward on Consideration Stage of the Bill in the House of Commons on 5th May, and the Provisional Order Procedure amendments, advocated by this Association, Electricity Undertakers, and the Association of Municipal Corporations were carried on a division by a majority of 61 to 51.

These amendments would not have been passed had not Members of the Association been able to obtain a large amount of support from their local Members of Parliament, and the thanks of the Association are due to the following, as well as the Association's Parliamentary Chairman, viz., Mr. Chuter Ede, Mr. David Adams, Mr. Graham White, Sir Robert Aske, Mr. R. Gibson, Mr. Dingle Foot, Mr. T. Magnay, Mr. Annesley Somerville and Sir Adam Maitland, all of whom spoke strongly in favour of our amendments.

When the Bill reached the House of Lords the Board of Trade suggested some amendments to the Promoter which he accepted after submitting them to the Association for approval, and they were inserted in the Bill in Committee in the Second House on the 27th June.

These amendments were designed to simplify the procedure with respect to the making and approval of Orders under Section 1 as set out in the First Schedule and were unobjectionable.

Civil Defence Act, 1939

This important Government measure received the Royal Assent on 13th July.

There are a number of sections which affect Dock and Harbour Authorities.

Part V (Sections 36-42 inclusive) is devoted to Public Utility Undertakers. Section 36 provides:

1. That it shall be the duty of all public utility undertakers not later than one month from the passing of the Act to make a report in writing to the appropriate Department stating what measures they have taken or are proposing to take to secure that all persons employed by them are trained as regards the routine to be followed in the event of an air raid and that a suitable proportion of those persons are trained and equipped to give first-aid treatment, to deal with the effects of gas, and to fight fires.

Dock and Harbour Authorities' Association—continued

Dock, Harbour, Canal and Inland Navigation Authorities come within the definition of Public Utility Undertakers, *vide* Section 90, and the appropriate department to whom the written report must be made is defined (again by Section 90) in the case of such undertakings, to mean the Minister of Transport.

As to what is considered to be the suitable proportion of persons, A.R.P. Memorandum No. C.5, which deals with docks, suggests that one employee out of every 20 should be trained in first-aid and anti-gas precautions.

As to fire-fighting arrangements, dock areas are included in the arrangements made for augmenting public fire-fighting services. Dock authorities are, however, expected, like every other undertaking, to make such arrangements as will serve to localise an outbreak of fire and for this purpose to equip and train fire parties capable of handling, in their incipient stages, such fires as may occur on the premises. This will generally include the provision of trailer pumps as well as hand appliances, such as two manual pumps and stirrup hand pumps. (See para. 4 (d) of the Home Office Preliminary Memo. on the Organisation of Air-Raid Precautions Services in Industrial Undertakings, and the Training and Equipment of Personnel, June, 1939).

2. That the Minister of Transport may serve a notice upon, *inter alia*, Dock and Harbour Authorities requiring them in addition to making the report as to training, to make a report as to the measures they have taken or are taking:—

(a) to provide air-raid shelter for their employees, and

(b) to secure the due functioning of their undertaking in the event of hostile attack.

3. That it shall be the duty of any undertakers who employ persons within an area specified by the Minister in an Order made under Part III, to make a report in writing not later than three months from the making of the Order, stating what measures they have taken or are taking or proposing to take to provide shelter for their employees, notwithstanding that no notice has been served upon them by the Minister of Transport under the previous part of the section.

An Order has been made by the Lord Privy Seal entitled the Civil Defence (Specified Areas) Order dated 14th August, 1939 (S.R. & O. 1939, No. 893).

Section 38 provides for the grant of an amount in the pound equal to the standard rate of income tax for 1939-40 towards expenses of a capital nature in the provision of shelter accommodation of the approved standard incurred by public undertakers who are under an obligation by Section 36 to provide shelter or have been served with notice to provide shelter for their employees. The grant, however, is only payable if the shelter was provided or measures were being taken for its provision before 30th September, 1939.

On the question of shelter accommodation, Members were informed in Circular No. 476, dated 27th October, of the views of the Government as to the efficiency of ships both under repair in a shipyard and loading and discharging in Port, to act as a protection against blast and splinters.

Section 39 provides for a grant not exceeding 50 per cent. towards approved expenses of a capital nature of public utility undertakers in taking measures to secure the due functioning of their undertaking in the event of attack.

Members have been informed that an amount of 1½ million pounds has been approved by the Treasury as available under this heading for all the docks, independent and railway-owned, subject to a similar amount being expended by them. Among the works which might be considered to be qualified to rank for this grant are:—

- Protection of vital points.
- Additional traffic facilities.
- Alternative service supplies, e.g., hydraulic or electric power, water supply.
- Emergency repair stores.

Section 40 deals with railway undertakings.

Section 41 (Provisions as to Dock and Harbour Undertakings). In the Bill as introduced Sub-clause (1) of this section merely provided that the expenses incurred in providing shelter for persons not employed by a dock or harbour authority,

but who are likely to be found in the dock or harbour, may be treated for the purpose of grant as if they were expenses incurred in providing shelter for employees.

The Association, as a result of a letter to the Minister of Transport dated 5th April, 1939, forwarded to Members with Circular No. 460, was asked to submit a revise of this Sub-clause, and the draft which was forwarded was with certain drafting alterations accepted by the Government and adopted in Committee in the House of Commons (*vide* Circular No. 464).

The revised Sub-clause provides that if on the application of dock or harbour undertakers the appropriate department so order the previous provisions of the Act relating to the provision of shelter for employees of public utility undertakers shall apply in relation to the dock or harbour undertakers as if all persons likely to be found during air raids in the dock or harbour were persons employed by the undertakers, and the Order may contain provisions for the recovery of expenses in the provision of such shelter by:

(1) Allowing such increases in the undertakers' charges as may be specified in the Order;

(2) Allowing the recovery from such persons or classes of persons using the dock or harbour as may be specified in the Order such sums as may be determined by the Order; or

(3) Allowing the undertakers to borrow such sums as may be specified in the Order.

A number of Members of the Association have already obtained orders under Sub-section (1) of Section 41.

This Section 41 further allows a grant not exceeding 17/20ths of approved expenses of a capital nature on measures taken to secure that the undertaking is capable of providing services which would not apart from hostile attack or the danger thereof be required to be provided by that undertaking.

No limit of the total amount available has been laid down by the Treasury for docks as has been done in the case of the 50 per cent. grant for measures to ensure the continued functioning of the undertaking.

Sub-section (3) of Section 41 allows a grant not exceeding 50 per cent. of approved expenses of a capital nature on measures designed to provide facilities for the collection of casualties occurring in the dock or harbour or on land adjacent and the treatment thereof in first-aid posts.

First-aid posts (including cleansing and decontamination arrangements for casualties) will qualify for this grant.

Section 43, Part VI, is another section which affects dock and harbour authorities. It provides that it shall be the duty of, *inter alia*, public utility undertakers to take any necessary measures to secure in the event of war throughout any period of darkness:

1. That no light is allowed to appear from within any building used for the purposes of the undertaking;

2. That no lights not within a building remain alight unless they are essential for the conduct of work of national importance, are adequately shaded, are reduced in power and, except where the Minister otherwise directs are capable of instant extinction.

There is a useful proviso inserted in the Bill in the Second House providing that the above shall not apply to any light exhibited solely in the interests of navigation.

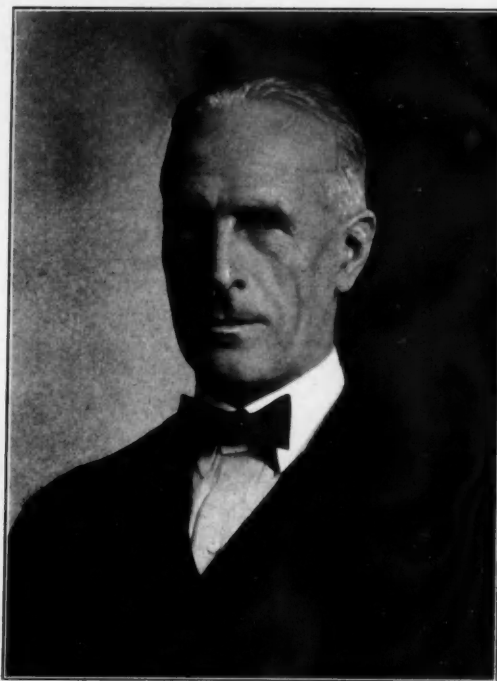
With regard to lighting however the recent Lighting (Restrictions) Order dated 19th January, 1940 (S.R.O., 1940, No. 74), appears to have superseded the above section for all practical purposes.

Section 45 deals with camouflage and empowers the Minister to serve a notice on *inter alia* public utility undertakers, requiring them to take such measures as may be specified to render the premises less recognisable by aircraft. A useful publication on this matter has been issued by the Government entitled "A.R.P. Handbook No. 11, Camouflage of large Installations" (price 3d.).

Ministry of Supply Act, 1939

Arrangement with the Government dated December, 1920, for payment of Dock and Harbour Dues

The Bill which sets up the Ministry of Supply was introduced at the end of May, and received the Royal Assent on 13th July.



LORD RITCHIE OF DUNDEE
(Elected Chairman of the Association for the eleventh successive year).

Dock and Harbour Authorities' Association—continued

By Section 2 (3) power is given to apply by Order in Council in relation to the Minister or property under his control, *inter alia*, Section 28, Harbours, Docks and Piers Clauses Act, 1847. This section is the one which exempts H.M. Ships and Stores from harbour dues and rates.

The Ministry was therefore approached in order to obtain an assurance that it would be bound by the Arrangement with the Government of 1920, which provides for the payment of Dock and Harbour Dues on and for services in connection with vessels and goods in Government service.

To these representations the Ministry replied that the Arrangement of 1920 was regarded as a peace-time arrangement which does not take into consideration the possibility of a state of war, and that while the Minister was prepared to give an assurance that goods acquired for purely trading purposes should be subject to the usual payment of harbour, dock and pier charges, he felt bound to require that the exemption from these charges given by the Harbours, Docks and Piers Clauses Act of 1847, should be fully enforced during the war period in respect to Government stores.

It is unnecessary to indicate how serious an effect this assumption of freedom from dock charges on Government stores would have upon the finances of Dock and Harbour Authorities, and no time was lost in seeking an interview with the Ministry's officials in conjunction with the Railway Companies' Association in the negotiations which led up to the Arrangement of 1920.

At that interview on the 8th November the conclusions reached were summarised as follows:—

- (i) The 1920 Arrangement should be applied to Ministry of Supply business.
- (ii) The appropriate lower rates of charge provided in the Arrangement should be applied to goods remaining in Government ownership.
- (iii) That unless a certificate of Government ownership was produced at the time of importation full charges should be paid in the first instance, rebate being allowed on production of a certificate.

It is clear then that the Government considers itself bound by the Arrangement of December, 1920, but as points may arise from time to time, Members are advised to write to the Association in cases of difficulty in connection with the interpretation of the Arrangement or its application.

Water Undertakings Bill

This Bill, which was designed to consolidate with amendments enactments relating to water undertakings, was read a second time in the House of Lords on the 6th June, and referred to a Joint Committee of both Houses. The Bill had been prepared by the Central Advisory Water Committee, *vide* Association's Report for 1938, page 15.

The Joint Committee completed their consideration of the Bill before the end of July, but owing to the war emergency the Bill had to be dropped.

Before its introduction the Ministry of Health submitted the draft to the Association for their observations, and a number of the points which were then raised mainly to protect navigational interests were put right in the Bill as introduced.

When the Bill finally emerged from Committee it was not considered to be detrimental to Members of the Association.

Chartered and Other Bodies (Temporary Provision) Act, 1939

This useful Government Bill received the Royal Assent on 16th November.

Section 2 of the Act provides that certain statutory bodies (including dock and harbour authorities) may in the interests of economy or efficiency seek powers by way of Order in Council to—

- (i) extend the term of office of members or officers.
- (ii) postpone the date of election of new members or officers (with consequential provisions as to any register of electors), or
- (iii) fill vacancies among such members or officers.

The Minister to whom application should be made for an Order in the case of Dock and Harbour Authorities is the Minister of Transport, and proposals to the Minister should be accompanied by sufficient extracts from the Act or Order in Council under which the Authority was constituted, specifying the existing obligations, the detailed proposals of the authority and a statement of the grounds upon which it is claimed that the relaxation or variation sought will secure economy or efficiency in the carrying on of the work of the authority under war conditions.

Application by Railway Companies for removal of Statutory Regulation of Charges for the Conveyance of Merchandise.

Following the remit by the Minister of Transport of the Railway Companies' application to the Transport Advisory Council

(Annual Report for 1938, pages 13 and 14) two meetings were held with the Railway Managers, as a result of which a Memorandum to the Transport Advisory Council was agreed and signed by Sir Lionel A. P. Warner as representing non-railway-owned docks on the Transport Advisory Council, and by the Railway representatives on the Council. This Memorandum (referred to below as Appendix VIII) is set out at the end hereof.

The Memorandum was accepted by the Advisory Council in their Report to the Minister (dated 4th April, 1939), and the following is an extract from this Report:—

“DOCKS AND HARBOURS

72. Statutory provisions for safeguarding the competitive position of non-railway-owned docks have been made by Parliament in:—

(i) *Railway and Canal Traffic Act, 1888 (Section 30)*, which provides that any port or harbour authority or dock company which shall have reason to believe that any railway company is by its rates or otherwise placing their port, harbour or dock at an undue disadvantage as compared with any other port, harbour or dock to or from which traffic is or may be carried by means of the lines of that railway company, either alone or in conjunction with those of other railway companies, may make complaint thereof to the Railway and Canal Commissioners who shall hear and determine the complaint;

(ii) *Road and Rail Traffic Act, 1933 (Section 37 (10))*, which gives similar protection to dock and harbour companies in the case of agreed charges made by a railway company;

(iii) *Railways Act, 1921 (Section 78)*, which enacts that where under the Act an application may be made by a representative body of traders, the application may be made by (among others) any harbour board; and

(iv) *Railways Act, 1921 (Sections 58 (4) and 59(6))*, which contain provisions in regard to the adequacy of charges in respect of the ancillary undertakings of the railway companies, including docks.

73. The railway representatives agree that if the existing control of railway freight charges is to be relaxed it will be necessary to provide other safeguards in place of those mentioned above. The matter has been discussed between the two parties and the agreement which they have reached is embodied in a memorandum which they have submitted (Appendix VIII). They recommend that any independent dock authority which alleges that a railway company is by its rates or otherwise prejudicing the undertaking of that authority should have the right to make complaint to the Railway and Canal Commission which should have power to hear and determine the complaint and to give such relief as it may think proper.

74. The parties also agree to set up voluntary machinery with the object of ensuring closer contact and co-ordination between the independent dock undertakings and the railway companies by which means the efficiency of the transport system as a whole will benefit.

75. We approve the terms of the agreement and recommend that, in the event of the present statutory control of railway freight charges being relaxed, the independent dock undertakings should be given a right, on the grounds stated in the memorandum, of making complaint to the Railway and Canal Commission which should be required to hear and determine the complaint and give such relief as it may think proper.”

This Report has been accepted by the Government in principle as stated in the House of Commons by the Minister of Transport on the 24th May, who added that it is intended to introduce the appropriate legislation to implement the Report as soon as possible.

It should be mentioned that with reference to paragraph (3) of the memorandum attached as an appendix hereto Counsel's (Sir Stafford Cripps, K.C.), opinion had been obtained as to the form of the clause to safeguard the independent dock undertakings which will form part of the Bill to repeal the present restrictions on the railway companies.

Finally, it may be said that throughout the negotiations with the Railway Managers the Association's right to take any action to safeguard the interests of their members during the progress of any legislation to give effect to the Railway Companies' proposals has been strictly reserved and also the right of any individual member to take any action which it may deem advisable to protect its own interests in connection with such legislation.

Collaboration between Independent and Railway-owned Docks

A number of joint meetings took place in June and July between representatives of the Association and Railway representatives at which questions of common interest were discussed with a view to ensuring that common action should be taken.

Dock and Harbour Authorities' Association—continued

The main questions considered were under the Civil Defence Act, the Ministry of Supply Act, and the problems which would arise in the event of an emergency when traffic would have to be diverted from its normal channels.

Railways Act, 1921

1939 Review of Standard Charges and Exceptional Charges

In view of the agreement with the Railway Companies set out in the Transport Advisory Committee's Report already referred to, which deals with the Railway Companies' application for freedom from statutory restrictions, the Committee decided that no objection should be lodged by the Association at the Review.

The Tribunal's written judgment dated the 18th July decided that the deficiency in the Railway Companies' accounts is not due to lack of efficiency or economy in the management, and is likely to continue, and therefore no modifications were made in the charges.

Import Duties Act, 1932

Value of Goods for Duty—Landing Charges at certain Ports

A deputation from Chambers of Commerce, the Chamber of Shipping and the Association saw Customs Officials on the 17th March, and made strong representations against the flat rate amounting to 3s. per ton for landing charges which the Customs were adding to the value of certain goods in computing the duty payable at Bristol Channel and other Ports (Report for 1937, pages 21 and 22, and for 1938, page 17). This matter which would no doubt have been concluded in 1939 has not yet, owing to the War, been settled.

Model Schedule of Charges—Seaplanes

This Schedule which has been for more than two years under negotiation between the Ministries of Air and Transport, the Railway Companies' Association and this Association was finally agreed in August.

The Schedule which is attached to Circular No. 475 sets out the services for which a charge may be imposed; the actual amount to be charged under the various headings being a matter for settlement by the Air Ministry when application is made by the Harbour Authority for approval of a scale of charges.

The letter from the Ministry of Transport dated 14th August forwarding the approved Schedule, states that seaplanes or similar craft on Government service will come under the heading of "ships" in the Arrangement with the Government dated December, 1920, which provides for the payment of dock and harbour dues on and for services in connection with vessels and goods in Government service.

Tonnage Measurement

The Mercantile Marine Department, Board of Trade, submitted in March a copy of the "Draft Regulations for Tonnage Measurement of Ships," prepared for the League of Nations Technical Committee by a drafting Committee of experts drawn from various maritime nations.

The Board of Trade desired the views of the Association and the Railway Companies owning docks upon the draft prior to its final revision by the League Drafting Committee.

As this matter was of a very technical nature, the Executive Committee asked Mr. R. J. Wallace, Treasurer, Mersey Docks and Harbour Board, and Mr. J. H. M. Cornish, Port of London Authority, to report upon the documents, and at a subsequent meeting with Railway representatives their report was adopted.

The Report showed that the draft Regulations did not embody any suggestions which are contrary to the British Merchant Shipping Acts, and that so far as the draft Regulations deal with the actual measuring of the spaces they were designed to ascertain more accurately the internal capacity of vessels.

The Board of Trade were informed that for the above reasons the draft Regulations were agreed to and the opportunity was taken of submitting for the consideration of the Board certain recommendations for the improvement of tonnage measurement which would require fresh legislation.

The thanks of the Association are due to Mr. Wallace and Mr. Cornish for the great trouble which they took in considering the draft international regulations and amendments, and for their valuable report on the documents.

Limitation of Liability—The "Millie"

(64 "Lloyds List" Report, page 318).

This was a case which concerned the right of shipowners to limit their liability in respect of wreck removal expenses incurred by a Canal Company acting under statutory powers, and is of considerable interest to dock, harbour and inland navigation authorities.

The facts were, shortly, that the vessel was sunk owing to her negligent navigation in the Manchester Ship Canal and that the Canal Company raised and removed the wreck and sought to recover the whole of these expenses.

The shipowners contended that they were entitled under Section 1 of the Merchant Shipping (Liability of Shipowners and Others) Act, 1900, to limitation of liability. This section extended the shipowners' limitation to all cases where (without their actual fault or privity) any loss or damage is caused to property or rights of any kind whether on land or on water, or whether fixed or moveable, by reason of the improper navigation or management of the ship.

Mr. Justice Langton, in the course of his judgment, said that he agreed that the Canal Company's right to an unobstructed fairway had been interfered with and that the expense incurred in restoring that right was a form of loss or damage. But he failed to see how the loss or damage in question was caused to any property or rights. The Canal Company's right was certainly infringed by the obstruction, and the removal of the obstruction caused a certain expense. But neither the right nor the property of the company had thereby suffered any loss or damage. The expenses incurred were not caused by the negligence but were really incidental to it and arose out of special circumstances which supervened after the first effects of the negligence had already been exhausted. The words of the Act of 1900 were extremely wide, and seemed almost designed to cover any form of damage or expenditure, but in his Lordship's opinion they did not cover the expenses in dispute, and therefore the owners' claim to limitation failed.

Arrangement with the Government, December, 1920, for payment of Dock and Harbour Dues on and for Services in Connection with Vessels and Goods in Government Service

Apart from the general question raised by the Ministry of Supply and referred to earlier in this Report, there have been a number of cases considered by the Committee where guidance has been sought as to the interpretation and application of the Arrangement. The following gives a short account of these cases:—

1. Small craft taken over by the Admiralty.

Advice was given that the Arrangement clearly provided for the payment of dues on ships belonging to and fully chartered by the Crown subject to a 25 per cent. reduction in certain cases, but that there was no exemption from dues provided in respect of small craft.

2. Admiralty Salvage Vessels.

If belonging to or fully chartered by the Crown and used purely for naval, military or air force services, the vessels are entitled to the 25 per cent. reduction in dues.

3. Stores shipped by Contractors for the Admiralty.

If the goods are shipped by the Contractors for the purpose of the military services of the Crown or the direct use of a Government Department, and are not for sale or resale or for any trading purpose, and provided a certificate to this effect from a responsible Government official is lodged by the shipper, the goods are entitled to the 25 per cent. rebate.

4. Lighters carrying Ammunition.

Lighters while engaged in carrying ammunition for the Admiralty and concerning which a certificate from a naval officer had been lodged stating that they were fully chartered by the Crown for this purpose are entitled to the 25 per cent. rebate.

This applies even if at other times the vessels are engaged in lighterage business for other parties.

Principal Circulars issued in 1939

- Interim Reports (May and September) (Nos. 464 and 475).
- Air Raid Precautions—Schemes for Dock Areas (Nos. 449 and 453).
- Civil Defence Bill (Nos. 460, 464, 467 and 468).
- Coast Protection Bill (Nos. 450 and 457).
- Emergency Screening of Buoy Lights (No. 452).
- Railway Charges for Merchandise Traffic—Dock and Harbour Interests (No. 454).
- Payment of Wages during absence through illness—Marrison v. Bell (No. 465).
- Emergency Legislation (No. 474).
- Arrangement with the Government—Ministry of Supply (No. 478).
- Chartered and other Bodies (Temporary Provisions) Act, 1939 (No. 479).

Miscellaneous

Other matters which received attention during the year included the following:—

Air Raid Precautions—

- (a) Grants to Dock Authorities.
- (b) Provision of Steel Helmets, Sandbags, Respirators.

British Standards Institution—

- A.R.P. Specifications.
- High Alumina Cement.
- Manila Ropes for General Purposes.
- Round Strand Steel Wire Ropes for Lifts and Hoists.

Dock and Harbour Authorities' Association—continued

Colliery Owners Committee—Classification of Harbour Boards as "Public Utility."
 Damage to Ships—Foul Berths.
 Dock Police—Exchequer Grant.
 Dock Property—War Damage.
 Factories Act, 1937—Section 22 (10) Fencing of Teagle Openings.
 Holidays with Pay.
 Income Tax—
 Mills, Factories and other Premises.
 Depreciation Allowance—Street Lighting.
 Industrial Welfare Society—Canteens in Industry.
 Institute of Transport—Water Transport Premiums.
 Ministry of Supply—Iron and Steel Priority.
 Nigerian Harbours—Questions as to Administration.
 Oil in Navigable Waters—Prosecutions.
 Pest infestation of Stored Products.
 Port and Transit Organisation—Expenses.
 Poster Sites—Government Requirements.
 Schedule of Reserved Occupations.
 Superannuation Schemes.
 Thomas Gray Memorial Prizes.
 Tonnage Measurement—
 (a) Dues on Food Stuffs Carried in Unregistered Spaces
 (b) U.S.A. Vessels—Appendix Certificate—Deduction for Propelling Power.
 Workmen's Compensation—Royal Commission.
 Wreck Removal—
 (a) Admiralty Salvage Section.
 (b) Powers in Private Acts.

The Committee have dealt with several other important matters which it is not considered expedient to refer to in the Report.

Accounts

The expenditure charged to this year's Accounts amounts to £2,497 19s. 2d. of which £2,492 2s. 0d. is payable by Members of the Association.

The surplus, being excess of income of the year over expenses, amounted to £36 19s. 6d.

According to the Constitution and Rules of the Association (Rule 12 (5)) a surplus of income shall be credited to the following year's subscriptions of the Authorities in proportion to the amount of their subscriptions. As the surplus is so small it is proposed to ask the Association in Annual Meeting for permission to carry forward this balance to the coming year's accounts.

**MEMORANDUM referred to in Report
Railway Charges for Merchandise Traffic**

Memorandum (Appendix VIII) submitted to the Transport Advisory Council by the Railway and Dock and Harbour representatives

(1) In considering the question remitted to us by the Minister of Transport in his letter of the 12th December last we have given special attention to the position of Dock Undertakings. Some of these are conducted as independent undertakings, under local ownership and management, whilst others are owned and managed by Railway Companies as ancillary undertakings.

(2) We have discussed the matter with representatives of the Dock and Harbour Authorities' Association. They urge that if the Railways were liberated from the existing system of control over their merchandise charges, they would have an unfettered power to favour their own Docks at the expense of independent Dock Undertakings; further, that they would be in a position to disturb the proper relativity of rates between competing Ports or Docks, irrespective of ownership, and thus introduce an element of instability which would be contrary to the public interest and prejudicial to particular Ports or Docks.

(3) We agree generally that there is force in this contention and that some form of safeguard is called for, and recommend that any independent Dock Authority which alleges that a Railway Company is by its rates or otherwise prejudicing the undertaking of that Authority, should have the right to make complaint to the Railway and Canal Commission which should have power to hear and determine the subject matter of any such complaint and give such relief as it may think proper. The establishment of such a right of appeal would require legislation and we propose that an appropriate clause should form part of any Bill repealing the present restrictions on the Railways.

(4) With a view to avoiding disputes and to ensure closer contact and co-ordination between the independent Dock Undertakings and the Railway Undertakings we also recommend as follows:—

(a) There should be regular and formal meetings between the Dock and Harbour Authorities' Association and the Railway Companies, to be held at such intervals as may be agreed, at which all questions of railway rates

charged or to be charged and other matters of mutual interest, as affecting any Port, Harbour or Dock, could be brought up for discussion and if possible adjustment.

(b) Local or district meetings of the two sides could also be arranged, and matters brought up at these meetings should be settled as far as possible by agreement, with reference to the central meeting on points of difference.

(c) Each side should undertake to give to the other full information on all points relevant to the matters under discussion, and any accredited representative of the Dock and Harbour Authorities' Association should be entitled to information as to any railway rate and any condition applicable thereto in which any Member of the Association may be interested.

(5) It is evident that if the proposals which we are putting forward in regard to the co-ordination of all forms of transport are approved, fresh and amending legislation will be required as soon as a scheme for a correlated rates structure and a common form of rate control has been brought into shape. Under our proposals this development should not be delayed beyond five years, and might be far enough advanced for legislation even before that period. We therefore agree to the proposal that the Act should in the first instance run for a maximum period of five years. This proposal has the further advantage that the Dock and Harbour Authorities' Association, or individual Dock Undertakings, if they find the new Act operates in any way to their disadvantage, will have an opportunity presented to them within a comparatively short period of time for proposing appropriate amendments or further safeguards for inclusion in any new Act.

(6) Subject to the arrangements outlined in the previous paragraphs, we believe the effect of the changes proposed will be to ensure closer contact and co-ordination between the independent Dock Undertakings and the Railway Companies with consequent advantage to the efficiency of the transport system as a whole.

(Signed) L. A. P. Warner. (Signed) Stamp.

Docks and Harbours.

R. L. Wedgwood.

J. Milne.

24th February, 1939.

Railways.

Ports and Free Ports

(concluded from page 120)

The Port of San Francisco offered to establish a zone at Pier 45. This pier is one of the best piers on the West Coast. It is our opinion that it is admirably adapted to the purpose of Foreign Trade Zone operations, but the Foreign Trade Zones Board has decided otherwise. That Board has demanded that we meet certain conditions, some of which we consider unnecessary and some of which are practically impossible.

The Foreign Trade Zones Board also demands a site and facilities which will provide for expansion far beyond anything which can be anticipated within the next few years on the basis of the operations of the only established zone—that at New York.

We were willing to set aside a two-million dollar facility for the purpose of trying out this experiment, knowing full well, from our own investigations, that it would not pay for some time. But the Foreign Trade Zones Board has refused to grant the permit at this site.

One of the important expense items is that for United States Customs Guards and other services. Under ordinary circumstances, these expenses are absorbed by the Federal Government, whereas in Foreign Trade Zones, the expense of maintaining guards must be borne by the operators of the zone. The estimated expense of this service at San Francisco is approximately \$1,800 per month. The Foreign Trade Zones Board also requires that the site be barricaded, not only on the land side, but also on the water side. In the New York Zone the water side is protected by an electric eye. The Foreign Trade Zones Board claims these precautions are necessary to protect the revenues of the Federal Government and to prevent smuggling. Such elaborate and expensive protection seems rather unnecessary, when it is considered that no such precautions are considered necessary when foreign cargo is handled on the ordinary piers. It would seem that the use of facilities, which are considered the last word for cargo handling, should be good enough for foreign trade zone operations and that barricades and customs supervision should be reduced to the minimum. If this policy were followed, it might result in the establishment of additional zones, while, on the other hand, if sufficient unnecessary expense is added to the cost of handling the cargo in the zones, this might cause shippers to resort to the drawback system for the same results at less cost.

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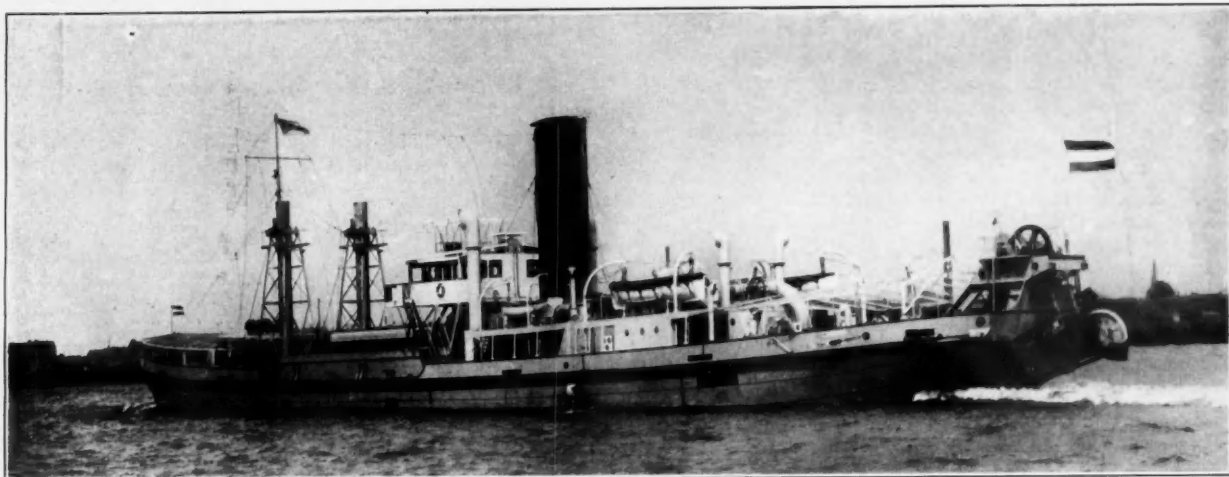
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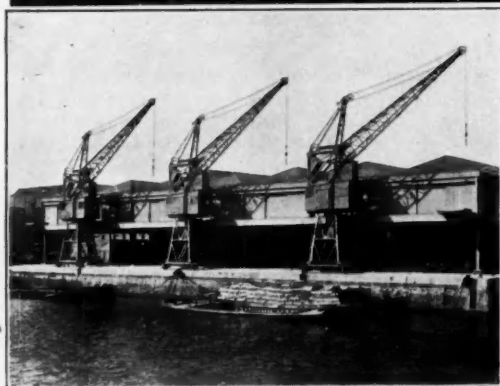
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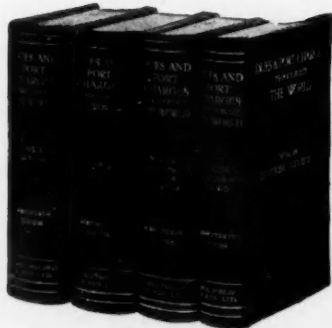


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